

# TCA

**The Canadian Amateur**

Canada's Amateur Radio Magazine  
La Revue des Radioamateurs Canadiens  
NOVEMBER / DECEMBER 2015 – NOVEMBRE / DÉCEMBRE 2015

*Season's Greetings – Joyeuses Fêtes*



**The Evolution of a  
Winning ARRL SS CW Team**

**The 2015 World Radiocommunication  
Conference Gets Underway  
#RACatWRC15**



# RFinder - The World Wide Repeater Directory...now the Repeater Directory of ARS Italia, RSGB UK, FMRE Mexico, DARC Germany, URE Spain...Canada was the first. Thanks RAC for your vision of one repeater directory for Earth! RFinder.



RFinder - The World Wide Repeater Directory is the official repeater directory of RAC! Support RAC by choosing RFinder as your repeater directory

Find RFinder in Google Play, the Apple App Store on your iPhone/iPad/iPod Touch or on the web at [www.rfinder.net](http://www.rfinder.net) for only \$9.99[usd]. Use RFinder in your favorite radio programmer such as RT Systems or CHIRP or access it at <http://web.rfinder.net>. Generate TPE files or POI files for your favorite GPS! Find repeaters over routes in the web or in RT Systems!

**RFinder** Liste des relais

WWRD-Annuaire Relais Officielle du Canada

**VA3ODG C/Ottawa**  
0 km IRLP Echo: **DSTAR**  
145.53 MHz (-) PL:88.5 All\*:

**Manotick ARG/Ottawa**  
0.32642 kn 95% 07:17

145.45 **Official Repeater Directory**

**VE7E19** Location: 52.196800, -106.896800 [D062pe] v5.15.237  
**VE5CC:Saskatoon** 3.9mi [SW]  
0.94773 kn 449.975MHz (-0.005) PL:0.0  
162.55 **AllStar: IRLP:1360EchoLink**

**VE5FUN:Saskatoon WIN System Affiliate** 4.0mi [SW]  
**VE2CRG** 147.525MHz (0.0) PL:100.0  
4.7018 kn **AllStar: IRLP:1667EchoLink**

**VE5FUN:Saskatoon** 4.4mi [S]  
146.745 441.650MHz (+5.0) PL:100.0  
**VE2REH** **VA5DR:Saskatoon** 4.4mi [S]  
5.9458 kn 448.125MHz (-5.0) PL:0.0  
147.105 **AllStar: IRLP: EchoLink**

**VE5CC:Saskatoon** 4.4mi [S]  
**Dist Freq** 146.970MHz (-0.6) PL:100.0  
**AllStar: IRLP: EchoLink**

**VE5SK:Saskatoon** 4.4mi [S]  
146.640MHz (-0.6) PL:0.0  
**AllStar: IRLP: EchoLink**

**VE5CMR:Saskatoon** 4.4mi [S]  
443.150MHz (+5.0) PL:0.0  
**AllStar: IRLP:1330EchoLink**

**VA5SV:Saskatoon** 4.4mi [S]  
145.330MHz (-0.6) PL:100.0  
**AllStar: IRLP: EchoLink**

Dist Freq Call Map

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Dist Freq Call Map

**RFinder** ROUTE SEARCH

Search around a location (lat/lon)

User E-Mail:   
Password:

Define Route:  
Origin:  (lat, lon, address, etc.)  
Destination:  (lat, lon, address, etc.)

Band Selection:  
☐ AllStar ☐ IRLP ☐ EchoLink  
☐ DSTAR ☐ 220MHz ☐ 902MHz

Distance off road:  
Max: 40 miles (65 km)  
0 miles 0 km

Waypoints Along Route:  
(lat, lon, address, etc.)

Dist Freq Call Map



# SEASON'S GREETINGS – JOYEUSES FÊTES



[http://www.cafepress.ca/rac\\_radio](http://www.cafepress.ca/rac_radio)

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2015**

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"Two old high school buddies, 50 years out of school, got together for a beer and to reminisce about the good old days. About how much fun they had at Field Day and the times they'd set up a station in the middle of nowhere just to have fun. And then came the question: Wouldn't it be fun to relive those days? Then came an opportunity. The American Radio Relay League (ARRL) instituted a new Multioperator Low Power category for their November Sweepstakes contest. Why not? Something different. It'd be fun!" – page 29

**Note: TCA is best viewed in colour on the RAC website at <http://wp.rac.ca>**

## ARTICLES WANTED

We would love to receive your articles – both technical and non-technical. Please send them to the TCA Editor at [tcamag@yahoo.ca](mailto:tcamag@yahoo.ca).

We are also looking for two new columnists: Antennas; and YL News.

Lastly, we need your photos – especially if they are like the one on the front cover.

Please see page 16 for more information.

The deadlines for the next issues are November 15 and January 15.

**For RAC Membership Inquiries and Change of Address please contact RAC HQ at: [rachq@rac.ca](mailto:rachq@rac.ca)**

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For complete  
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Section News on  
page 60-63.

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2015 TCA.

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Box 33062  
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## Silent Keys – In Memoriam

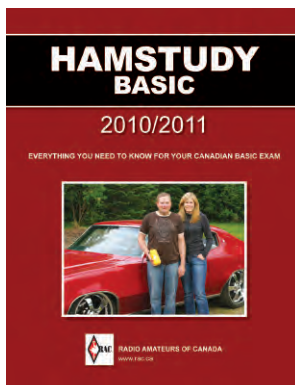
With regret, we record the passing of these Amateur Radio operators.

Nous avons le regret de vous annoncer le décès des radioamateurs suivants.

- VA3EHB – Harry Blake, of Thunder Bay, ON, at age 93, on August 19, 2015.  
VA3LL – Laurie LeBlanc, of Windsor, ON, at age 72, on September 19, 2015.  
VA3OGR – Grant Reed, of Athens, ON, at age 67, on September 4, 2015.  
VA3XDN – Dan Ramboer, of Petrolia, ON, at age 64, on September 3, 2015.  
VE2NI – Thain MacDowell, of Pointe-Claire, QC, on August 5, 2015.  
VE3ASA – Carl White, of Ottawa, ON, at age 76, on August 23, 2015.  
VE3AVO – Bill Duff, of Picton, ON, at age 68, on August 28, 2015.  
VE3BM – Bill McElroy, of Cambridge, ON, at age 72, on August 2, 2015.  
VE3BYI – Jack Harman, of Greenwood, ON, at age 88, on July 25, 2015.  
VE3CJT – John Jones, of Omemee, ON, at age 81, on May 25, 2015.  
VE3DKW – Mike Sherba, of Oshawa, ON, at age 84, on August 3, 2015.  
VE3DVE – David Flarity, of Fenwick, ON, at age 76, on August 18, 2015.  
VE3ERD – Bob Davies, of Mount Forest, ON, at age 83, on December 14, 2014.  
VE3GNR – Jim Roberto, of Welland, ON, at age 92, on September 7, 2015.  
VE3HAY – Jim Christie, of Chatham, ON, at age 81, on September 12, 2015.  
VE3IGG – Diane Buckley, of Smiths Falls, ON, at age 71, on August 8, 2015.  
VE3IHK – Vic Naderer, of Whitby, ON, at age 78, on August 11, 2015.  
VE3JHP – Jim Pedersen, of Ailsa Craig, ON, at age 88, on July 23, 2015.  
VE3PJ – Salt Jones, of Scarborough, ON, at age 99, on September 13, 2015.  
VE3YSC – Saul Cartman, of Sudbury, ON, at age 70, on August 8, 2015.  
VE4BGN – Rick Nickerson, of Flin Flon, MB, at age 59, on September 17, 2015.  
VE4GN – Glenn Wiebe, of Beausejour, MB, on September 20, 2015.  
VE6NYC – Larry Edelstein, of Spring Hill, FL, at age 68, on July 24, 2015.  
VE6TG – Tom Reed, of Olds, AB, at age 65, on August 18, 2015.  
VE6TJ – Howard Snider, of North Newton, KS, at age 92, on August 2, 2015.  
VE7CCL – Harry Prochazka, of Richmond, BC, at age 74, on August 30, 2015.  
VE7FTM – Bob Moss, of Nanaimo, BC, at age 93, on August 11, 2015.  
VE7PT – Peter Thomas, of Victoria, BC, at age 94, on August 28, 2015.

*Note: In the above list an \* indicates that a call sign has been reissued. The list of Silent Keys is prepared by volunteers at RAC Headquarters. Please send obituary notices by email directly to [rachq@rac.ca](mailto:rachq@rac.ca).*

## RAC OFFERS BOTH BASIC STUDY GUIDES

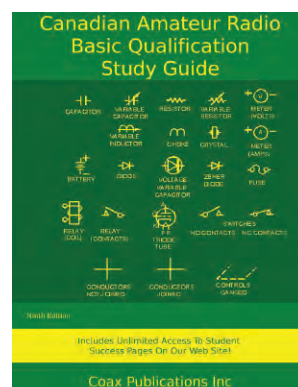


*"This is the perfect reference for new Radio Amateur enthusiasts. It provides everything needed to qualify for the Basic Exam."*

For more information see the ads on pages 8 and 37.

*"The 9th edition has been completely revised to address changes in technology in the five years since the 8th edition was produced."*

For more information see the ads on pages 27 and 37.





# Feedback: Readers write to The Canadian Amateur

## DEALING WITH RFI

I enjoyed the article about how to chase down hydro interference to the Amateur Radio frequencies ("Dealing with RFI" by Gary Bartlett, VE1RGB, July/August 2015 TCA). If I may, I would like to add a few specifics to the process, having been involved for many years. Before you start, eliminate your own house by shutting off the mains, and use a battery powered RX to determine if the offending interference is still there. Also keep an open mind that it may be something other than a power line problem.

Interference from the high voltage lines is tricky business and success comes with a lot of practice. Here are a few additional tips that might help the do-it-yourself investigator.

In addition to logging the interference and making notes, it is important to listen intently to the noise with an AM receiver and carefully note its characteristics. This can be a little challenging if there are multiple noise sources so pick out the most offensive one

Now to the chase! You will need a receiver preferably to 400 MHz with AM mode. If all you have is VHF that will do, but in that case an outboard attenuator is recommended. High voltage arcing generates a wide spectrum of noise, the intensity of which tapers off as you go up in frequency. Outside your QTH make sure you are listening to the same characteristic noise as the one that bothers you in the shack. This is very important because you want to be chasing the correct noise. Start on the Amateur band and keep tuning up in frequency until the noise can just be heard. You may notice that the noise favours small bands of frequencies with recurring peaks and valleys as you tune higher.

Now you can go mobile and I suggest two runs north-south and east-west of at least two kilometres. Do not change frequency or volume during this step. While two kilometres may seem too far, I have been fooled too many times by limiting the search range. If the noise fades on the RX, keep driving until you are sure you are beyond it (you may hear other noises but with different characteristics). When you have completed the initial survey, you will have isolated the noise to a general smaller area.

Step 2 involves the same procedure. In the centre of the general strongest area of the noise, tune your RX to the highest frequency where the noise can still be heard and adjust the volume to a reasonable level. You might want to reacquaint yourself with the noise characteristic in the shack to make sure you are still chasing the right noise. If you are at the highest frequency limit of your RX then the attenuator will come in handy.

Do the drive again and this time you should run out of the noise much sooner in each direction.

Again adjust the frequency up or attenuate. Following this procedure will bring you to the source. It is often possible to disrupt the noise by tapping the pole with an *insulated* hammer while listening for a break in the noise source. In addition, you may want to visually check for the obvious such as pieces of stray wire hanging on the line. Don't ignore ground wires coming down the pole as even a loose staple can cause a noise. If you have an ultrasonic detector which can be pointed at the various parts of the pole, it is very effective. Industry Canada used them.

*Do not touch any of the pole components.*

An experienced lineman will probe and tighten the individual components on the pole and should be able to stop or disturb the noise while you listen. Now with all this fantastic technique, you might want to know that I was at the wrong pole more times than I care to admit. '73 and good hunting!

For more information see also:

<http://www.hpl.hp.com/hpjournal/pdfs/IssuePDFs/1967-05.pdf>

[http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h\\_sf06086.html](http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf06086.html) (information circulars)

PS an AC voltmeter attached directly to the speaker output makes a dandy noise strength meter.

*Bill Bouwhuis, VE3YR  
Binbrook, Ontario*

## KIT BUILDING

I built my first kit when I was 10 or 11 in 1959 or 1960. It was a Heathkit crystal set, the CR-1. It was a gift from my brother-in-law who had been a navigator in World War II.

I built several other Heathkits in the following years. They all worked except

the Q-Multiplier. I returned it to Heathkit, they repaired it and sent me a note saying that it had many cold solder joints. I did not know what a cold solder joint was!

About 10 years ago, I needed some Fahnestock clips for a simple circuit I was building. Online, I discovered that the Borden Radio Company in Texas sold them along with crystal sets, a one-tube radio, parts and literature about their products. I sent an email to the owner, Lance Borden, WB5REX. He said he would mail me the clips immediately, before receiving my payment. Although the amount was small, I appreciated his trust in me, a total stranger and fellow Amateur.

A few words about Lance: he was, until recently, one of the many engineers who were responsible for the avionics systems on the NASA Space Shuttle. He retired after the last Shuttle came back to Earth.

A few years ago, I decided to buy Lance's Armstrong one-tube radio kit. It reminded me of the Heathkit two-tube regenerative radio I built when I was an adolescent. Lance describes it as "the distillation of many circuits for one-tube sets that have appeared since Edwin Armstrong invented the regenerative circuit in 1912."

The instructions to build the kit were not always easy to understand and all of the parts were not easy to see in the drawings. My Elmer worked on it but, in the time he had, was not able to repair all of my mistakes. I wrote to Lance to tell him about my difficulties. He apologized for the lack of clarity and asked me to mail the kit to him at my expense. He offered to repair it at his expense and return it to me at his expense. The radio works! Lance recently informed me that he is in the process of rewriting the instructions and drawings. The new kits will also include photographs.

To me, Lance is a good example of the kind of Amateurs I have met since I got my Amateur certificate in 2005. The vast majority of my fellow Amateurs are honest, helpful and try to do the right thing.

In the near future, when I get a better antenna, Lance and I will attempt a QSO on 40m.

*Robert Cherry, VA3AOD  
Editor of "The Rambler"  
Ottawa Valley Mobile Radio Club*



## ARRL PROPOSED CHANGES TO US HF BAND PLANS

I noted in the July/August 2015 TCA (page 7) that RAC's International Affairs Officer, George Gorsline, VE3YV, on behalf of the RAC Band Planning Committee, penned a comment outlining the deleterious effects of the American Radio Relay League's move to expand digital sub-bands.

George, thank you for doing that.

Bill Karle, VE1YY (ex-VE4KZ)  
Lantz, Nova Scotia

## MAUNDER MINIMUM

Those words can cause a brain cell to give up a tiny spark. We have all heard of it, but none of us has yet experienced it. The Maunder Minimum was named for English astronomer E. W. Maunder (1851 to 1928) who described the prolonged minimum in sunspot activity (1645 to 1715) on, where else, the sun and its coincidence with the Little Ice Age.

While we wait to see if Cycle 25 is a boom or a bust for WW contesting, we might want to find some humour in what may be heading our way. Mr. Maunder was saddled with an unfortunate surname. I looked it up. A maunder is a beggar. A maunder is also a piece of incoherent writing or speech (such as which some readers may have noticed in the "Random Thoughts" column). To maunder also is to grumble or growl, to fritter one's life away, be in dotage, or speak in a rambling way. It also means to beg in an aggressive way, which you might want to recall next time you are panhandled on a street corner.

So where is this maundering headed? I am sure the readers are ahead of me, but the sunspots have become scarce, and propagation weak in this last while as amply demonstrated by the VOACAP printouts I received from Bill, VE1YY, who is trying to help me understand it better. This is a little sample of what a Maunder Minimum would be like, and maybe the reason those new digital transceivers just happen to be coming on the market now. What do they know that we don't?

Big thanks to Dana, VE3DS, for his September-October 2015 column "Six Metres and Down". It touched on the subject very nicely and also offers alternative propagation modes that will be useful if F2 goes down on 6m and below. Worth the read, and also opens a new avenue for us hams to explore.

Dirk Moraal, VY1NM  
Tagish, Yukon Territories

## BEHIND THE SILENT KEY NOTICES

Mike Kelly, VE3FFK

A single line in the Silent Key listing may be the result of a few hours of effort, depending on what is available as a starting point. RAC HQ receives a few different types of notices, with different amounts of effort required before the Amateur in question can be noted in *The Canadian Amateur*.

"Mr Doe, a ham, passed away last year."

"My husband died last year, please stop sending me these renewal reminders, signed Mrs. Doe."

"Buddy is a Silent Key. His call sign is VE5&&&."

"Buddy is a Silent Key. The URL of his obituary is <http://www.....>."

"John Doe, VE5&&&, commonly known as Buddy, is a Silent Key. The URL of his obituary is <http://www.....>. Attached is a scan of the newspaper it was in."

From time to time we get: "My husband died last year, his call sign was VE5&&&. Here is a copy of his Death Certificate."

Often the first notification we get of a death is a note on a club or net website, which means we have to check each of the likely sites frequently. These notifications – intended for the regulars of the club or net, who all knew Buddy – tend to have little information beyond the call sign and the fact that they have joined the ranks of the Silent Keys. These tend to take a lot of work to confirm, as a single typo in the call sign (usually a VE in place of a VA) can gum up the works.

In the absence of the Death Certificate, a copy of an obituary needs to be found. There are a lot of people with the name Buddy Doe out there. Over time, a list of obituary aggregation, newspaper archive and funeral home websites has been built up to make the online searches possible. A general Internet search for "John Doe", or "Buddy Doe", usually ends with too many or too few (zero) possible websites.

If the obituary doesn't specifically reference his call sign – or at least his Amateur Radio activities – it is hard to determine if it is the right Doe. If the initial report includes a date of death that corresponds to the one in the obituary, we can be certain enough that it is the same person.

Sometimes the only confirmation is the online comments left by ham friends of the deceased, who frequently either mention on air activities or include their call signs in the comment. We try to publish the notice with the name they were known by on the air, rather than the name on their birth certificate; hence "Buddy, rather than "Jonathan".

Once we have a name and call sign, we next determine whether or not the deceased has already been removed from the Industry Canada list of Amateurs, and if they were a RAC member. If they are still in the Industry Canada public database, then the obituary is scanned and sent to them. You could save us a step here if you CC them at [spectrum.amateur@ic.gc.ca](mailto:spectrum.amateur@ic.gc.ca) when you inform us of a Silent Key.

**Note:** *The call signs of Silent Keys are held back by Industry Canada as unavailable, for one year after the date of death, to give family members time to get certified and request the call sign. Some Amateurs use the Silent Keys list to attempt to apply for a two-letter call just as one reaches the end of this one-year span. Of course, if multiple Amateurs are doing this, it still only works for one of them.*

Industry Canada tries to match the age given in the obituary with the date of birth they have in their offline records, to further ensure they have the correct Jonathan Doe. Some obituaries neglect to include either the person's age or dates of birth and death. If they are members of RAC, their membership information is updated since membership expires when the Amateur does. We also have to check if the person's passing was noted in a previous issue of TCA.

**Note:** *It sometimes happens that someone reads of a Silent Key in TCA, then tells another Amateur about it, without telling them how they found out. The second Amateur then kindly writes to TCA to inform us of the bad news. We prefer to be told twice, than not to be told at all.*

If the date of death is within the past two years, a notice goes into TCA. If it is farther back than that, the Silent Keys information is not published unless the person informing us of the death requests publication.

In either case, the information is added to the "all time" Silent Key list (which is not published). The information in this list is used from time to time for research purposes, such as tracing the past history of a call sign. Once the list for an issue is compiled, it is sorted, proofread and sent to the TCA Editor, who catches a few more errors and figures out how to fit it into the magazine. Because we are human, occasional errors slip by despite our best efforts. Please let us know about them and we will try to correct them.

Mike Kelly, VE3FFK, is just one of the many volunteers who help RAC in its day-to-day operations such as the processing of Silent Key notices. Thank you Mike and all volunteers for your dedication and hard work, and to everyone who sends obituary notices by email directly to [rachq@rac.ca](mailto:rachq@rac.ca).

# AROUND THE CORNER...

People, Places, News and Events on the Canadian Amateur Radio Scene

The following news items have been compiled from Industry Canada, RAC bulletins and the RAC website at <http://wp.rac.ca>.



## ANNUAL IARU REGION 2 EXECUTIVE COMMITTEE MEETING

The annual International Amateur Radio Union (IARU) Region 2 Executive Committee meeting was held in the city of Bogota, Colombia on September 19-20 with the presence of all Area Directors and of Rod Stafford, W6ROD, representing the IARU Administrative Committee.

At the meeting, the reports of each Area Director and of the Coordinators were read and analyzed, and the situation of each area and of member societies was discussed. In addition, information was provided and commented about the upcoming World Radiocommunications Conference 2015 (see page 24), to be held in Geneva, Switzerland, where there will be a discussion about the potential allocation of a band of frequencies around 5 MHz. Despite Inter-American and European proposals, it will be a tough battle that must be fought in Geneva, for which the active participation of member societies with their regulators is essential, so that the delegates of such organizations to Geneva support the proposals.

Another event that was widely commented was the next Region 2 General Assembly, to be held in Viña del Mar, Chile, in the second half of October 2016, an event for which there are good expectations. Besides the Assembly, there will be an emergency communications workshop and a seminar for member societies, an event that will be held for the first time in the region.

Given that Bogota was the venue of the meeting, Region 2 officers were able to meet with officers of the Liga Colombiana

de Radioaficionados (LCRA) to exchange impressions and to hear about their plans and expectations. The colleagues from LCRA that we were able to meet were Roberto Rey, HK3CW (President) and Álvaro Gómez, HK5NLJ/HK3 (Fiscal).

All participants were satisfied with the results of the meeting and reiterated their commitment to continue working in favour of their respective areas and of Amateur Radio.

In the above picture, from left to right are: *Standing*: Marco Tulio Gudiel, TG9AGD, José Arturo Molina, YS1MS, Roberto Rey, HK3CW, Jay Bellows, KØQB, Gustavo de Faria Franco, PT2ADM, Rod Stafford, W6ROD. *Sitting*: Dino Besomi, CE3PG, George Gorsline, VE3YV, Noel Donawa, 9Y4X, Reinaldo Leandro, YV5AM, Álvaro Gómez, HK5NLJ/HK3 and Ramón Santoyo, XE1KK.

*George Gorsline, VE3YV*  
RAC International Affairs Officer

## NEW ONTARIO GTA SECTION MANAGER

Congratulations are extended to Rick Harrison, VA3NV, who is the new RAC Section Manager for the Ontario GTA Section.

Rick has been active in the Section for many years and looks forward to working with all Amateur Radio operators in the GTA Section.

I join with the members of the RAC Executive and Board in saying welcome aboard.

*Doug Mercer, VO1DM*  
RAC Chief Field Services Officer

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## NEW DIRECTOR FOR ONTARIO SOUTH

RAC would like to welcome our new Director Phil McBride, VA3QR.

"I was licensed in May 1994 and hold my Advanced + Code Operator certificate. I first joined RAC approximately 14 years ago, during which I served as Emergency Coordinator for North Halton for a period of three years, and Assistant Section Manager for Ontario for an additional two. Within these roles, I had input into emergency communications planning in the Town of Halton Hills and the Region of Halton, as well as within the William Osler Hospital Foundation. In addition to my past experience within the RAC Field Organization, I am a current and active member of the Canadian Forces Affiliate Radio System. I have owned and operated an IT consulting firm for 15 years, and have sat on the boards of directors for three separate not-for-profit corporations.

As Director, I intend to use my knowledge of Amateur Radio, business management and corporate governance to serve RAC, and through RAC, the broader Amateur Radio community in Canada, by encouraging not only membership, but participation within the organization. With both small and large wireless communications firms working to acquire vast amounts of RF spectrum, it is vitally important, now more than ever, to have a strong, unified lobby that can sit across the table from our country's wireless regulators and represent the collective interests of the thousands of Amateur Radio operators throughout the country.

I look forward to working with all of those currently involved in the management of RAC, and welcome anyone with questions or concerns to contact me at [va3qr@rac.ca](mailto:va3qr@rac.ca)."

*Phil A. McBride, VA3QR / VA3KPJ*



## UPDATED RAC 0 – 30 MHZ BAND PLAN RELEASED

The RAC Band Planning Committee has released an updated band plan for all LF and HF (0 – 30 MHz) Amateur allocations. This includes the new LF bands at 2200m and 600m, the 60m USB channels, and changes to reflect current best practice on other bands.

The updated band plan represents the RAC Band Planning Committee's year-long review of all LF and HF allocations. It is intended to be a quick reference guide summarizing all bands on a single page. Special thanks go to Vince d'Eon, VE6LK, for designing the graphic for the RAC website and enduring many revisions.

The RAC 0 – 30 MHz Band Plan is available for viewing on the RAC website: <http://wp.rac.ca/rac-0-30-mhz-band-plan/> or by navigating through the "How to Start?" tab on the RAC home page. A downloadable PDF file is available by clicking the image.

Comments and suggestions are welcome. Please use the comment form provided on the RAC Executive webpage at <http://wp.rac.ca/executives/> and select International Affairs Officer. Comments will be acknowledged and forwarded to the full RAC Band Planning Committee for consideration as future updates.

*George Gorsline, VE3YV*  
*RAC International Affairs Officer*

## MISE À NIVEAU DE LA PUBLICATION CHEZ RAC DU PLAN DE BANDE 0 – 30 MHZ

Le comité de planification des bandes de RAC a rendu public une mise à niveau du plan de bandes pour toutes les basses fréquences (LF) et les hautes fréquences (HF) (0 – 30 MHz) allouées aux amateurs. Sont incluses, les nouvelles bandes LF de 2200m et 600m, les canaux 60m USB et les changements permettant un meilleur usage actuel des autres bandes.

La mise à jour du plan des bandes représente un travail de révision d'une année de la part du Comité de planification des bandes de RAC touchant toutes les allocations LF et HF. Le but visé était d'inscrire toutes les bandes sur une seule page afin d'offrir, en résumé, un guide de référence rapide. Remerciements spécifiques à Vince d'Eon, VE6LK, pour la réfection du graphique et plusieurs révisions.

Le plan des bandes de 0 – 30 MHz de RAC est disponible pour consultation sur le site web de RAC: <http://wp.rac.ca/qc/rac-du-plan-de-bande-0-30-mhz/> ou en navigant à partir de l'onglet "Comment débiter?" sur la page d'accueil de RAC. Le téléchargement en PDF est possible en cliquant sur l'image.

Les commentaires et les suggestions sont les bienvenus. Veuillez s.v.p. utiliser le formulaire à cet effet : <http://wp.rac.ca/executives/> et choisir « Responsable des Affaires internationales ». Il y aura accusation de réception et envoi de votre formulaire au Comité de planification des bandes de RAC pour considération aux prochaines mises à niveau.

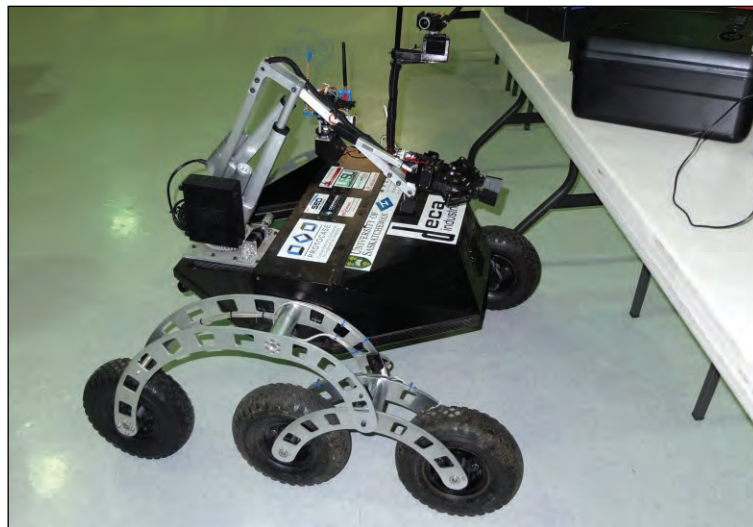
*George Gorsline, VE3YV*  
*Responsable des Affaires internationales*

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At the Ottawa Hamfest in September, Ontario North/East Director, Glenn MacDonell, VE3XRA, welcomed Bram Paterson, VE2XCS, into Radio Amateurs of Canada. Bram is the Treasurer of the West Island Amateur Radio Club in Montreal. He also edits the club's newsletter, produces videos of club activities and has posted a number of Amateur Radio videos on YouTube. Welcome aboard Bram!



Liam Bindle, VE5LRB, was the recipient of a RAC \$500 scholarship to study Electrical Engineering at the University of Saskatoon. Recently, he and two other students competed in a robot vehicle competition in Poland where his team won first place. The above photo is from the SaskHamFest where Liam displayed their robot. Congratulations Liam!

# AND AROUND THE WORLD...

## AMSAT FOX-1A CUBESAT LAUNCHES FROM CALIFORNIA

*AMSAT News Service and NASA reports:*

Right on schedule at 1249 UTC on October 8, the Atlas rocket carrying the AMSAT Fox-1A Amateur Radio CubeSat and 12 others lifted off from Vandenberg Air Force Base in California on the National Reconnaissance Office (NRO) NROL-55 mission. Fox-1A carries an Amateur Radio FM transponder. It appears that the first telemetry from the 1U CubeSat was heard in Japan at 1746 UTC. The first pass over the US was at about 2350 UTC.

Fox-1A employs Data Under Voice (DUV) to send 200 bps FSK telemetry data at the same time as FM audio by making use of sub-audible frequencies below 200 Hz. High-speed 9600 bps FSK also can be transmitted when the transponder is not operating for data-intensive experiments and is only active when commanded from the ground. Free FoxTelem telemetry decoder software is available to decode both DUV and high-speed telemetry. AMSAT also has posted a *Fox Operating Guide*.

Fox-1A went aloft as part of the NASA Educational Launch of Nanosatellites (ELaNa) program, which offers free launches to educational entities and encourages science missions. Prior to the launch, AMSAT Vice-President for Engineering Jerry Buxton, N0JY, was part of a NASA TV prelaunch panel.

Fox-1A includes a Mode B (U/V) FM transponder with an uplink frequency of 435.180 MHz, and a downlink frequency of 145.980 MHz and capabilities similar to those of the AO-51 satellite, which went dark in late 2011. Satellite users are advised not to attempt to access Fox-1A until AMSAT announces that it is available.

Four of the CubeSats going up on October 8 were NASA sponsored, and nine were NRO-sponsored, one of which was developed with NASA funding. All flew on the NRO's Government Rideshare Advanced Concepts Experiment (GRACE), which is an auxiliary payload aboard the NROL-55 mission. These CubeSats also include the first to be designed, built and operated by students in Alaska, and the first from Native American tribal college students.

## ARRL PRESIDENT CONGRATULATES HURRICANE WATCH NET ON ITS 50TH ANNIVERSARY

*The ARRL reports:*

On behalf of the League, ARRL President Kay Craigie, N3KN, has congratulated the Hurricane Watch Net (HWN) on the 50th anniversary of its founding by Jerry Murphy, K8YUW.

"Thanks to the efforts of the Net's dedicated and knowledgeable volunteers across five decades, Amateur Radio has played a key role in helping protect the lives of a great many people in harm's way," President Craigie told HWN Manager Bobby Graves, KB5HAV, this week in an email. "The Net demonstrates how significantly Amateur Radio contributes to emergency preparedness and promotes international goodwill. Please relay to the Net's members my appreciation and respect for a half century of outstanding service. Best wishes for many more years of successful operation of the Hurricane Watch Net."

Graves replied, "It is an honour and pleasure to be a part of such a great group of ham radio operators with a rich history. I will certainly share your letter with our membership and, more importantly, with our founder Jerry Murphy, K8YUW." Murphy founded the HWN in 1965 during Hurricane Betsy as "an informal group of Radio Amateurs who recognized a need to provide communications to and from hurricane affected areas." The net now enjoys a formal relationship with the National Hurricane Centre and its WX4NHC amateur station.

The HWN activates on 14.325 MHz whenever a hurricane is within 300 miles of projected landfall or becomes a serious threat to a populated area.

## UK EXAMS CHANGED

On October 1 the new United Kingdom's licence rules started to be examined. Updates to the Foundation, Intermediate and Advanced training books have been published in "Books Extra" on the Radio Society of Great Britain's (RSGB) website.

The revised exam reference data booklets and sample exam papers have also been made available in "Training" on the RSGB website. These should now be the only ones used by anyone preparing for a UK Amateur Radio exam.

If anyone has any questions about these changes, please contact Philip, M0PHI, Chair of the RSGB Training and Education Committee, by email at [tec.chair@rsgb.org.uk](mailto:tec.chair@rsgb.org.uk). For more information visit <http://rsgb.org/main/>.

## WORLD RADIOCOMMUNICATION CONFERENCE 2015

The World Radiocommunication Conference 2015 (WRC-15) will be held in Geneva, Switzerland, from November 2 to November 27, immediately after the Radiocommunication Assembly 2015 (RA-15) held from October 26 to 30.

World Radiocommunication Conferences (WRC) are held every three to four years. It is the job of the WRC to review, and, if necessary, revise the Radio Regulations, the international treaty governing the use of the radio-frequency spectrum and the geostationary-satellite and non-geostationary-satellite orbits. Revisions are made on the basis of an agenda determined by the International Telecommunication Union's Council, which takes into account recommendations made by previous Conferences.

The general scope of the agenda of world radiocommunication conferences is established four to six years in advance, with the final agenda set by the ITU Council two years before the conference, with the concurrence of a majority of Member States.

Under the terms of the ITU Constitution, a WRC can:

- 1) revise the Radio Regulations and any associated Frequency assignment and allotment Plans;
- 2) address any radiocommunication matter of worldwide character;
- 3) instruct the Radio Regulations Board and the Radiocommunication Bureau, and review their activities;
- 4) determine Questions for study by the Radiocommunication Assembly and its Study Groups in preparation for future Radiocommunication Conferences.

You will be able to keep abreast of the WRC-15 through periodic RAC bulletins. Bryan Rawlings, VE3QN, RAC's Special Advisor at WRC-15, will also be posting significant events and background on Twitter under the hashtag #RACatWRC15.

For more information see the article on page 24 of this issue of TCA.



# A MESSAGE FROM THE PRESIDENT / UN MESSAGE DU PRÉSIDENT



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On September 27, I was privileged to be at my cabin near Kenora in Northwestern Ontario and to observe the lunar eclipse.

The full moon was blindingly brilliant, a beacon that banished all but the brightest stars and painted a vivid reflection on our lake.

Only the three bright stars of the summer triangle – Altair, Deneb and Vega – were easily seen.

I stood at the edge of our lake watching as the moon raced in the sky and caught up with the earth's shadow. Our moon dimmed and reddened as it entered the shadow and the curvature of the earth was easily observed on the lunar surface. The sky filled with all the stars of the heavens and the Milky Way replaced the moon as the most brilliant object in the sky.

*The wolf pack across the lake began to howl...*

What has this to do with radio you might well ask?

Sometimes I forget that radio is much more than electronics and wires in the air. Radio at its most basic is as grand as that night sky. We induce nature to invisibly carry whispers at the speed of light; these whispers are captured in invisible electromagnetic waves. These whispers could come from next door, from the other side of the world, from the International Space Station, from the moon, from the surface of Mars, from a spacecraft orbiting a comet or passing Pluto. And we can whisper back.

As Radio Amateurs we are both practitioners and the acolytes of this world of whispers carried on invisible waves. Our ancestors would have viewed radio as magical and mysterious and would have seen radio operators as wizards commanding forces that reach unimaginably afar. I for one don't want to lose that sense of wonder.

As many are aware this is my last President's message. My term started January 1, 2010. My last day is this December 31.

## Some final observations:

RAC was bankrupt in 2008 and 2009 with liabilities exceeding assets. This was after numerous years where expenditures exceeded income. Yet those two years combined saw overspending of over \$120,000 on an approximately \$250,000 annual budget. By 2010 the financial cupboard was bare. There was little cash on hand, we were shackled with extravagant contracts for office equipment and we were locked into an excessive office lease. We had excessive and market-less inventory, a habit of excessive spending and RAC revenues and membership were falling. It was a failed organization.

Fast forward to 2015. Revenues have modestly exceeded expenses for four years (2011, 2012, 2013 and 2014) and will be so for 2015. We have been solvent since the middle of

Le 27 novembre, j'ai eu le privilège d'observer l'éclipse lunaire à partir de mon minuscule chalet à Kenora.

La pleine lune, d'une brillance éclatante, était comme un phare aveuglant qui ne laissait voir que les étoiles les plus brillantes, et qui réfléchissait sa lumière blanche sur notre lac.

Seules les trois étoiles du triangle estival – Altair, Deneb et Véga – pouvaient être facilement vues.

Je me tenais debout sur le bord du lac à regarder la lune monter dans le ciel jusqu'à rejoindre l'ombre de la terre. Y pénétrant, notre lune devint pâle et rougeâtre ; la terre imprimait sa courbure sur la surface lunaire. Alors le ciel se remplit d'étoiles et la Voie lactée remplaça la lune comme l'objet le plus brillant du ciel.

*De l'autre côté du lac, une meute de loups fit entendre son hurlement...*

Mais qu'est-ce que cela a à faire avec la radio me diriez-vous?

Parfois j'oublie que la radio est beaucoup plus que de l'électronique et des fils se dressant dans les airs. La radio dans son ensemble est aussi vaste qu'un ciel de nuit. Nous demandons à la nature de transporter de faibles ondes électromagnétiques à la vitesse de la lumière, dans le silence et sans être vus. Des ondes destinées à être captées. Ces ondes, que l'on peut comparer à des « chuchotements », peuvent provenir de la porte d'à côté, de l'autre côté du monde, de la station spatiale internationale, de la lune, de la planète Mars, d'un vaisseau orbitant autour d'une comète ou passant près de Pluton. Et nous pouvons leur répondre.

Comme radioamateurs, nous sommes à la fois des praticiens et des servants de ce monde de « chuchotements » et d'ondes invisibles. Nos ancêtres peuvent avoir perçu la radio comme quelque chose de magique et de mystérieux et, les opérateurs, comme des magiciens commandant à des forces capables de communications incroyablement éloignées. Pour ma part je veux être de ceux qui ne veulent perdre ce sens du merveilleux.

Comme plusieurs le savent déjà, le présent message est mon dernier à titre de président. Mon premier mandat a commencé le 1<sup>er</sup> janvier 2010. Le 31 décembre 2015 sera mon dernier jour.

## Voici quelques unes de mes dernières observations:

RAC était littéralement en faillite en 2008 et 2009 avec des dettes bien au-delà des avoirs. Cet état existait depuis plusieurs années durant lesquelles les dépenses excédaient les revenus. Le total des dépenses de ces deux années dépassait de 120,000 \$ notre budget annuel d'approximativement 250,000 \$. En 2010, l'état des finances atteignait sa limite du tolérable. Il y avait peu de liquidité disponible. Nous étions pris avec des contrats extravagants de location d'équipements et un bail excessif de location d'espace bureau. Nous avions un inventaire dévalué résultant d'une propension marquée à la dépense. De plus les revenus et le nombre de membres de RAC étaient en décroissance. Bref, l'organisation était littéralement en faillite!

Allons rapidement à 2015. Les choses ont changées. Les revenus dépassent légèrement les dépenses depuis 4 ans (2011, 2012, 2013 et 2014). Il en sera ainsi pour 2015. Nous sommes solvables depuis le milieu de 2012 et nous avons maintenant une réserve de liquidité. Tous les contrats de location d'équipements de bureau

2012, there is now a reserve, we have cash on hand, all office equipment contracts were allowed to expire or were terminated, our office quarters are in line with our staffing and it is considered a sin by RAC volunteers to expend more than we take in income.

All of which came at a price to volunteers in terms of many, many hours of work and an impact on their pocket book. For years there was little or no reimbursement for any expenses (including trips to Ottawa and Annual General Meetings).

**Q: How do you make a small personal fortune with RAC?**

**A: Start with a large personal fortune. Sometimes I wonder why we all did it.**

At the end of all the work and sacrifice laid the fiscal foundation for RAC's future. However we are still below the fiscal critical mass that we need.

There are many things that still need to be done:

1) Membership: membership fell dramatically in 2008, 2009 and 2010. It stabilized in 2012. Membership now stands at around 4,700. Too low. We need to attract and engage a broader range of Amateurs including: those who use Amateur Radio to support their "real" hobby such as boating or hunting; "New Canadians"; Aboriginal peoples; youth; and women.

2) Continuity: I once told federal officials that RAC would survive with stability in the President's position and competence in our office. I attended a dinner in 2010 where an International Amateur Radio Union (IARU) official asked "who's in charge this week?". At that point no President had completed their term for several years. I was the first President to finish a term since Earl Smith. Santayana said, "those who cannot remember the past are condemned to repeat it". A lack of continuity kills.

3) Paid support: we cannot depend on volunteers for the mission critical functions. We need to hire people to ensure timeliness, quality and accountability.

4) Merger of our lines of communications: TCA, the new RAC website and social media are all separate silos. They need to be amalgamated editorially so that these lines are seamless. No more silos. We are in the 21st century and need to exploit 21st century technologies.

5) More volunteers please: there will still be many volunteer tasks but there are very few volunteers. There are not a lot of people standing up to volunteer – for example, there is not a long line-up to be President. Since 2013, RAC volunteers, such as Directors and Executive, have gone out and about the country to meet with RAC members and these Forums have resulted in outstanding communication and more volunteers. More Forums please. Face to face is the way to both communicate and recruit.

6) More money please: nothing can be accomplished without resources and Amateurs are notoriously cheap. RAC had to adopt a business-based model to survive and had to abandon the previous socially-based model of providing services to all Amateurs, whether they were a RAC member or not.

We now provide services to RAC members only, but we continue to advocate for all Amateurs. We need money for advocacy, a domestic legal defence fund, staff, sending representatives to the World Radio Conferences in Geneva (see page 24) and communications.

seront résiliés ou ont pris fin ; nos bureaux de quartiers respectent les besoins du personnel et le coût de toute expansion dépassant les revenus sera considérée comme un « péché » par les bénévoles de RAC.

Tout a un prix pour les bénévoles en termes des nombreuses heures travaillées, et même un impact sur leurs carnets de banque. Pendant des années, il n'y avait peu ou pas de remboursement pour leurs dépenses (incluant leurs voyages à Ottawa ou aux assemblées générales annuelles).

**Q : Comment arriver à une petite fortune personnelle chez RAC?**

**R : Il faut débiter avec une bonne fortune personnelle! (Parfois je me demande pourquoi nous l'avons tous fait!)**

C'est par l'exécution de tout ce travail et en consentant ces sacrifices que nous avons réussi à construire les bases financières nécessaires à l'avenir de RAC. Cependant, il faut avouer que nous sommes toujours en deçà de la masse critique financière dont nous avons besoin.

Il y a encore plusieurs choses qu'il nous faut accomplir :

1) Les membres: le nombre de membres a chuté dramatiquement en 2008, 2009 et 2010. Il s'est stabilisé en 2012. Le nombre de membres se situe actuellement aux environs de 4700. Pas assez! Nous devons attirer et mobiliser un plus grand nombre d'amateurs de toutes les horizons : immigrants, autochtones, les jeunes et les femmes, tout en incluant ceux qui utilisent la radio amateur pour soutenir leur premier hobby tels la chasse et le canotage (boating).

2) Continuité : j'ai déjà dit à des responsables fédéraux que RAC survivrait dans la mesure où la présidence serait stable et que notre bureau fasse montre de compétence. J'ai participé à un souper en 2010 auquel s'était joint un responsable de l'Union internationale radio amateur (UIRA). Il a demandé : « Qui est responsable cette semaine? ». À ce moment-là, aucun président n'avait complété son terme depuis plusieurs années. J'étais le premier président à terminer son mandat depuis Earl Smith. Et Santayana répondit : "ceux qui ne peuvent se souvenir (des erreurs) du passé, sont condamnés à les répéter". Un manque de mémoire tue!

3) Payer pour le soutien : nous ne pouvons dépendre de nos bénévoles pour des missions critiques. Nous avons besoin d'embaucher des personnes compétentes pour profiter des opportunités, en assurer la qualité et en assumer la responsabilité.

4) La fusion de nos communications : TCA, le nouveau site web de RAC et nos médias sociaux sont tous distincts. Ils ont besoin de se regrouper dans un but de convergence de leur contenu. Fini la compartimentation! Nous vivons dans le 21<sup>ème</sup> siècle et devons utiliser les technologies du 21<sup>ème</sup> siècle.

5) Plus de bénévoles s.v.p. : il y a encore beaucoup de tâches pour les bénévoles mais ces derniers sont trop peu nombreux. Il n'y a pas beaucoup de gens prêts à se lever pour assumer des tâches volontaires. Par exemple, la file d'attente pour devenir président n'est pas longue! Depuis 2013, les bénévoles de RAC, à titre de directeurs ou membres de l'Exécutif, se sont dépensés à parcourir le pays pour rencontrer les membres de RAC. Il en est résulté une communication hors du commun et une augmentation du nombre de bénévoles. Plus de réunions de rencontres s.v.p.! Le face à face est le meilleur moyen de communiquer et de recruter.





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Advertising by Bruna Begali

At this point we have only one significant line of income: memberships. We are still well below our necessary fiscal critical mass. We need to at least double our income.

I have many people to thank. I am going to avoid names (except one) as I know I will miss someone.

Thank you to the Maple Leaf Members for supporting RAC. Thank you to the volunteers who beavered mightily on issues ranging from 60 metres to insurance to distracted driving to contesting to ARES to advocacy (national and international) to scholarship to ARRIS and more. Thank you to the Directors for having confidence. Thank you to the Executive for their hard and thankless work. But most of all thank you to my wife Beth for tolerating my long hours and absences.

On December 31, it is I who will be eclipsed. I hope that I don't turn blood red.

Goodbye and good luck!

Geoff Bawden, VE4BAW  
RAC President and Chair

6) Plus d'argent s.v.p. : on ne peut rien faire sans ressources et les amateurs ne sont pas reconnus pour leur générosité! RAC a dû adopter un model d'affaires pour survivre, et n'a eu le choix d'abandonner son modèle basé sur l'entraide pourtant conçu pour offrir des services à tous les amateurs, membres de RAC ou non. Présentement, nous fournissons des services aux membres seulement, même si nous continuons de défendre tous les amateurs.

Nous avons besoin de ressources pour défendre les droits des amateurs : un fonds légal, un personnel, l'envoi de représentants aux conférences mondiales de la radio (World Radio Conferences) à Genève (voir la page 24) et les communications.

Actuellement nous n'avons qu'une seule véritable source d'entrées de fonds: les membres. Nous sommes encore loin de posséder la masse financière nécessaire à nos besoins. Nous devons au moins doubler nos revenus.

J'ai beaucoup de personnes à remercier. J'éviterai de les nommer (excepter une) sachant que j'en oublierai.

Merci aux membres de Maple Leaf de soutenir RAC. Merci à nos bénévoles qui ont travaillé vaillamment sur les enjeux du 60 mètres, le plan d'assurance, la conduite inattentive, les contestations, ARES, la défense de nos droits (nationaux et internationaux), les bourses d'études, ARRIS et plus encore. Merci aux directeurs pour leur confiance. Merci aux membres de l'Exécutif pour leur travail difficile, sans demander merci. Et, comme la plupart d'entre vous, je remercie aussi mon épouse Beth d'avoir toléré mes longues heures d'absence.

Le 31 décembre, ce sera à mon tour de m'éclipser. J'espère que je ne prendrai pas la couleur rougeâtre de la lune!

Aurevoir et bonne chance!

Geoff Bawden, VE4BAW – RAC Président-directeur général

– Traduction par Claude Lalande, VE2CLF. Merci Claude!







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**Radio Amateurs in Region 2** are fortunate to have access to spectrum allocations throughout the UHF/VHF and Microwave bands. Many of our readers however, have never ventured past 30 MHz, preferring to crowd into our HF allocations.

What many don't know is that moving from HF to UHF/VHF is like moving to cottage country from the big city – less hustle bustle, fewer crazies, a quieter pace and small town camaraderie.

To be honest, it really pains me to see others, including trainers, promoting the use of only FM handhelds, which gives the impression,

# SIX METRES AND DOWN

## OUR UHF/VHF/SHF SPECTRUM ...

wrongly, that these bands are only good for short range FM – which is only one corner of a very large room. In fact, with today's technology there should be no FM only radios, but multimode FM, SSB, Digital, CW – all in one package!

So turn the lights on in the rest of the room folks and join in the fun of DXing, Satellites, Moonbounce, Networking, HD TV, Meteor Scatter, Contesting, Award Chasing, Experimenting, making stuff, and of course good old ragchewing!

Case in point, back in the pre-repeater days (1950s), the boys used to run AM/FM and eventually SSB on 144 MHz. With beams, Kitchener to Toronto was an easy hop, with Kitchener stations regularly checking into Toronto Nets.

Keep in mind that this was in the tube era, with noise figures on receive many dB higher than today, not to mention converted Channel 6 antennas or homebrew yagis, collinears, etc.

Recently, I met up with VE3UTN, who, new to 144 MHz SSB, expressed amazement at being able to work into Toronto from Kitchener! We have similar stories from London, Sudbury, Peterborough and Windsor. All now hotbeds of VHF activity.

Don't be afraid, and look at it as "that next challenge" to your Amateur career.

### SUMMER DX SUMMARY

We reported some Sporadic E contacts in the last issue. August brought some really interesting Tropospheric Bending (Tropo) DX on 144, 222, 432, 902, 1296 and 2304 MHz. Going up to the Mountain Lake APRS site, one could see the red zone of DX – this became known as "The Blob" during the opening. If the Blob was on you, you got DX.

The opening covered the Midwest initially with the boys in Manitoba in the thick of things. Barry, VE4MA and Bruce, VE4KQ, both reported DX across the Midwest.

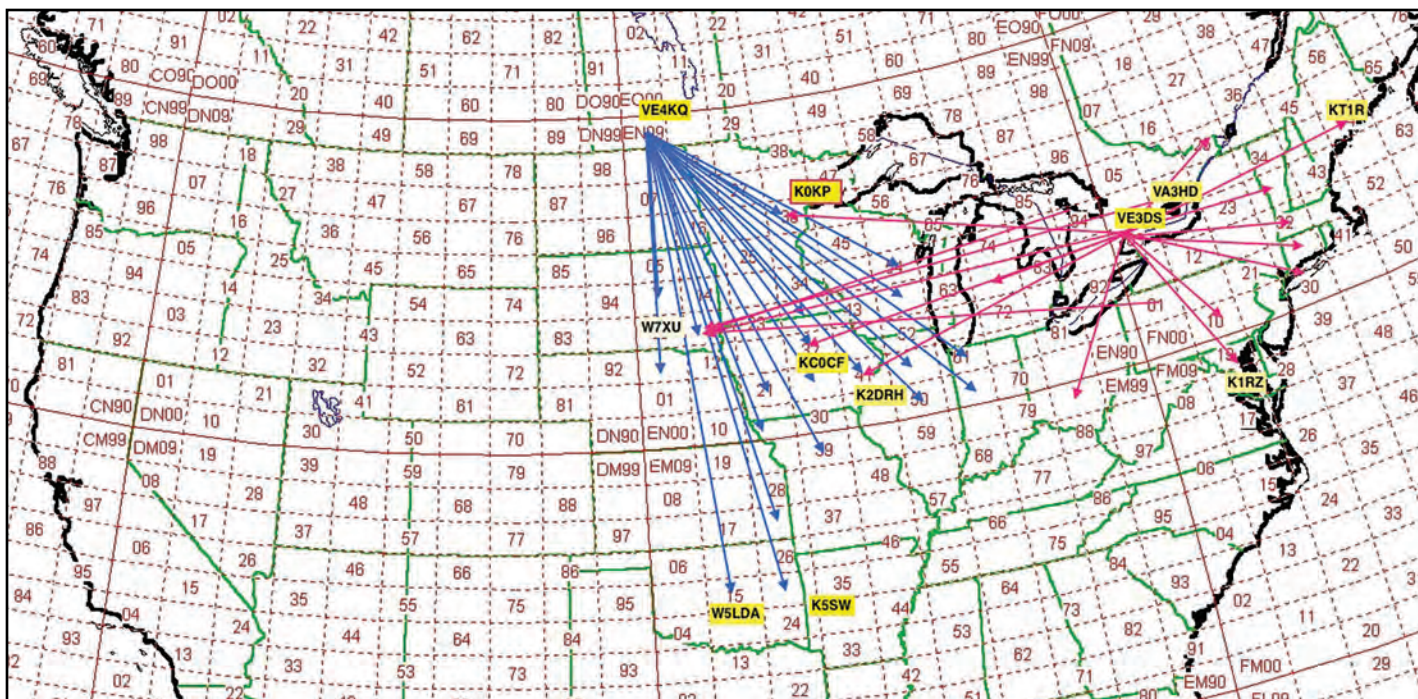
Bruce sent in a nice spreadsheet showing all his 144 and 432 MHz contacts – 62 contacts in total on tropo – and Barry send in a detailed report.

Here is Barry's report:

"It seems like the big opening may have dissipated considerably before it got to you! I was watching it close...hoping that it would make it far enough for us to QSO.

I got into the opening late...it started on Saturday nite locally but I just got home from a work assignment in Cape Verde at 10 pm after 24 hours of travel.

On Sunday morning I was alerted by an email from K0AWU (I should have known... have looked forward to the big openings in the last two weeks of August since 1978 when it extended to Detroit and Ohio. Anyway I did get on about 14:30 with the NOLL/B signal in and then it started (see next page).



DX worked by VE3KQ on 144 and 432 MHz; VE3DS and VE3HD 144 MHz contact with W7XU and others.



## August 30, 2015

14:35 NOLL 2, 222, 432 EM09ow 1110 km  
14:49 NOPB 2, EM39wo MO 1203 km  
15:00 W9EWZ, 2 EN52kr 994 km  
15:05 W9ZIH, 222,432, 1296 5x7 EN51nv, 1084 km  
15:31 K2DRH 2, 432 EN41vr 1043 km  
15:36 K0SIX, 432 EN35  
15:45 N9DG 432, EN53bj 903 km  
15:49 K0AWU, 432, EN37ed, short chat off back of his antenna, 393 km  
15:55 VE3KRP EN58ij, 222, 590 km

The band seemed to go quiet so I assumed it was over (Not!)

20:41 AB9QH, 432, EN62aa, 1116 km  
20:43 N4PZ, 432, EN52gb, 1046 km  
20:48 N9DG, 2, 222, EN53bj, 903 km  
2051 W9UW?, 2 EN52  
21:05 KD9AXR, 2, EN43mv, 806 km  
21:08 NOIRS, 2, EM29cw, 1202 km  
21:11 KG0SJ, 2,432, EN22vm, 842 km  
21:19 K9KEU, 2, EN52ro, 1036 km  
21:30 KM0T, 2, 5x9 EN13vb, 758 km  
Nice chat with Mike... not QRV yet again on other bands  
21:35 KB9YSJ, 2 EN51vj, 1113 km  
21:37 WA9KRT, 432 !, EN61pg, 1246 km  
22:20 W8BYA 2, EN70jt, 1363 km  
22:30 KA9CFD, 2, EN40om 1145 km  
22:35 NIL to NOOY, 1226 km???

## August 30, 2015

01:24 W9HQ, 432, EN43oq, 835 km  
02:09 WD9BGA 432, 1296 (20dB/N with 10 W), EN53ba, 934 km  
02:29 W8BYA, 432, EN70jt, 1363 km  
02:35 K9MRI, 2, EN71iu, 1354 km  
02:47 N9ISN 2,222, 432, EN44cw 680km  
02:59 K0SIX, 2, 222, EN35dj, 553 km  
0307 K9MRI, 432, EN71iu, 1363km  
04:00 K9CT, 2, 222, 432, EN50bp 1163 km  
Band was fading out quick, no luck on 1296

That was the end for me."

– Barry, VE4MA – EN19lu

Over the next 24 hours the propagation slowly moved east and the next morning VE3DS, VA3HD, VA3ELE, VE3MLM, VE3ZV plus others in Ontario found themselves in the DX action.

Best DX worked was Arliss, W7XU, in EN13, South Dakota on 144 MHz at 1406 km on August 31 with 100 watts at my end. Arliss also worked VA3HD in FN14 at an amazing 1535 km; Stan, KA1ZE/3 in FN01; and Peter, VA3ELE/p, near Wiarton, EN94 that morning! Arliss was in for almost two hours on a straight line west from FN03 to EN13. We also worked KC0CFT in EN32 at 1168 km and K9ILU in EN61 at 630 km. In addition, the night before I heard K2DRH in EN41 at 898 km on 902.1 MHz after working him on 144 and 432 MHz with solid signals!

Gradually the opening moved further eastward to include New England and the East Coast states as well. That night on 432 MHz we had some interesting signals – it sounded like someone playing a musical synthesizer, but one that literally lit up and covered the band.

Now knowing that the 70 cm band is allocated to the Radiolocation Service as Primary user – and given that this signal peaked toward New England – a quick search of YouTube verified that this was the PAVE PAWS Radar located on Cape Cod. It's a phased array electronically scanned system and was peaking 60 over S9 here in Toronto for a few hours. Stations to the east in Rochester reported it as did stations to the west of me. At the same time of course the band was open for 432 MHz tropo on SSB and CW, which made for an interesting and musical opening.

In addition, over or under the music we worked Dave, K1RZ, in Damascus MD, FM19 on 222, 432 and 902 MHz!

We also heard Dave's big 500 watt signal on 1296 every sequence, but were unable to complete on that band with the low power 6 watts here. Others in the log included: WB2SIH on 222 MHz from FN31; W1GHZ in FN34; K1GUP in FN54; KT1R in FN54; WZ1V in FN31; K8TQK in EM89; and many more on 144, 222 and 432.

In addition, the VE2FUT/b's in FN25 were copied on 144, 432, 1296 MHz here in Toronto, with strong signals at times.

Incidentally, Stan, VA3ST, in Font Hill is QRV on 222 with a transverter from Ukraine mentioned in an earlier column. Sure sounded good across the lake in FN03.

## ARRL UHF TIDBITS

Each year, the ARRL UHF Contest gives those with equipment for 222 and up an opportunity to really put things through their paces during the later part of the summer. This time of year often brings some good tropo and can make for interesting long haul contacts.

Activity was very good on 222 MHz this year, as was 432 MHz and 1296 MHz. Activity on 902 MHz is building up again as more are getting on with CW/SSB and FM. Remember, the SSB/CW DX frequencies for calling are 902.1 and 903.1 MHz.

## ARRL SEPTEMBER VHF QSO PARTY HIGHLIGHTS

What can I say? We had such nice weather in the east up until the start of the contest, and such nice weather after the contest... Catch my drift on this? The only thing that could have made things worse would have been snow. However, in true UHF/VHF style, the rovers hit the road, ready for mud and rain, and the home station guys made sure to stock up on hot coffee.

From the far west, Mark, VE7AFZ, was active from grids CO80 and CN89.

Below is a photo of Mark's rover setup in CO80. This demonstrates the value of roving: you can go to locations which support long haul propagation that you may not be in a position to utilize from home.

Congrats to Mark; and we will see more from him as he upgrades his station!



Other rovers in the east had a bit of a soggy time, but they were still out there slugging away. Russ, VE3OIL, Steve, VE3SMA (with Tony, VE3RZ) and Bill, VE3CRU, just to name a few, were active in a number of grids across southern Ontario. Congrats guys!

Anyone for airplane scatter? Peter, VA3ELE, found a cool program called Aircout by DL2ALF (<http://www.airscout.eu/>). This program overlays aircraft in the air in real-time against the propagation path between two stations, with the hope that the aircraft will reflect enough signal for a QSO. Know what? It works! Peter made some great contacts on 1296 MHz out over 600 kilometres using this technique. It explains why for example we get very intense signal bursts from stations on 222 MHz and Up.

## STATION DEVELOPMENTS

### VE3DS HackRF – SDR Transceiver

On September 22, Steve, VE3ZV, copied my HackRF CW beacon running on 1296.1 (for testing) at a distance of 99 kilometres. Power out was maybe 30 milliwatts to a 42-element loop yagi at 65 feet. Steve is receiving with a pair of loop yagis. Amazing this little box was heard at that distance! The next day, I was able to get it running on SSB as well, using a .wav file as a source for the voice. Next steps will be connecting a USB microphone! Keep you posted.

Interestingly, despite all the HackRF's out there, many are with non-hams and they are concentrating on receive only. What we need are more hams to dig in and put these transceivers to use, developing useful software tools as we go. Hopefully, at some point a software package like PowerSDR will talk to the HackRF and we will be away to the races!

## 1296 STATION ACTIVITY

### VE3ZV Beacon 1296

Steve has his beacon running again on 1296.327 MHz, using Keith, VE3DHL (SK) 1296 MHz KK7B no tune transverter. It's great that he was able to put it to good use as it was gathering dust in my basement. Steve's beacon was 40 over S9 on a few nights in September, and he promises to have one antenna pointed toward the GTA before winter.

VE3ROR in Hamilton is now QRV with my old Microwave Modules 1296 Transverter and loop yagi.

VA3ELE has a new tower up in Mississauga and a single 55-element loop yagi up on 1296. Peter promises more aluminum before winter.

– 73, Dana, VE3DS



## CALL FOR INFORMATION ON REPEATER FREQUENCY COORDINATION AND COUNCILS IN CANADA

With the advent in the early 1970s of VHF and UHF communication through FM repeaters in Canada, it became necessary for Radio Amateurs to establish Repeater Councils for the purpose of Frequency Coordination of new and existing repeaters and linking systems.

These Councils would accept applications from Amateur Radio clubs and other applicants who wished to establish a new repeater or linking system. They would then assign frequencies as well as CTCSS tones for the proper management of the Amateur Radio spectrum according to accepted band plans and the prevention of co-channel interference. A Google search reveals that many of the Repeater Councils are still active in Canada, however not all are evident.

We would like to gather more information about Repeater Coordination and Councils in Canada and that is why we are presenting this Call for Information.

If you have any information about the Repeater Council or Frequency Coordination Group serving your area or province, please send it to the TCA Editor at [tcamag@yahoo.ca](mailto:tcamag@yahoo.ca) along with your contact information, a website URL and/or a brief written description.

If there is sufficient response, this information will be compiled with the object of doing a feature article in TCA on the State of Repeater Councils in Canada.

## CALL FOR AUTHORS: ANTENNAS COLUMN AND ARTICLES

Ever since Marconi played with kites in Newfoundland, Amateurs in Canada have been doing interesting things with antennas. Since the earliest issues of TCA there have been hams working with other hams through these pages describing, explaining and researching antennas and related concepts. We are always looking for articles about your own experiences and are happy to provide this opportunity to share them with our readers.

We have in the past had great columns from David Conn, VE3KL, Art Blick, VE3AHU and Gerry King, VE3GK, among others. Each had a different style and approach to the subject. Now it's time for another author to take on the task. The idea isn't to copy previous columnists, but rather to bring a fresh personal take on the subject a few times a year.

Are you up to the challenge? Do you need additional information?

Do you have an article to submit? Please contact the TCA Editor at: [tcamag@yahoo.ca](mailto:tcamag@yahoo.ca).

## CALL FOR YL NEWS COLUMNIST AND ARTICLES

We have also been blessed in the past with great YL columnists: Cathy Hrischenko, VE3GJH and Val Lemko, VE5ACJ. Unfortunately, Val had to step down as columnist for personal reasons but she issued the following challenge in her final column:

"I really hope that there is a YL out there who will be willing to take over this column. We really need a voice in this magazine. There are many YLs who have not had their stories told."

In addition to the YL Profiles regularly featured in the column, the new columnist would be able to share information about what is going on in the YL scene in Canada and internationally. Please contact the TCA Editor at: [tcamag@yahoo.ca](mailto:tcamag@yahoo.ca).

**Photos Wanted:** We are always looking for great photos to grace the pages of TCA and especially on our front cover. If you have a portrait-oriented colour photo like that on our front cover (or a landscape-oriented photo that can be cropped), please send them to me at [tcamag@yahoo.ca](mailto:tcamag@yahoo.ca).





**Keith Baker, VA3KSF/KB1SF**  
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In previous columns, I've been sharing a bit of early Amateur satellite history with you. In future columns, I'll continue with this history lesson and also continuing sharing some very exciting news about some of the latest developments in the Amateur Radio satellite world. But first I'd like to continue passing along a few tips on how to get on the birds using simple antennas and mounts.

## THE GIZMO REVISITED

In our last installment, I introduced you all to "The Gizmo", a simple, Az-El mounting scheme for use with the popular "Arrow" style of antenna that was the brainchild of my very good friend Art Payne, VE3GNF, here in the local Sarnia, Ontario area.

In the November- December 2013 issue of *The AMSAT Journal*, Art again wrote about The Gizmo, noting that he had used his original Gizmo in the attic of his garage during the months of February and March 2014 with great success. Art further noted that he was able to work through all five Amateur Radio satellites that were available at the time; and he made well over 100 contacts with other satellite operators in 60 grids and eight countries on three different continents with this easy-to-use mount.

Portions of this article previously appeared as "The Gizmo Revised" in the May-June 2015 edition of *The AMSAT Journal*. Thank You AMSAT!

# AMATEUR RADIO SATELLITES

Like all ham-radio related projects, we hams are prone to tinkering and Art is no different. Soon after the original article was published, several Amateurs asked his advice on how to both make and use this simple system and this prompted him to also start tinkering with his original design.

One of the most frequently asked questions was about the bushings that he used for the unit. Since that time, Art has put a little more thought into how those bushings could be made both cheaper and easier.

The best advice he's since devised for potential builders is to use a piece of half-inch PVC material and bore it out with a 17/32-inch drill (or a ream if you have one) and using a PVC tee. You can then make the main part quite cheaply. You would then only need to make the nipple that mounts on the tripod from half-inch aluminum rod and you would be "good to go".

Art was also frequently asked about The Gizmo's counterweight, which, if you remember, was made from a soup can filled with cement. Art has since found that a short piece of three-quarter-inch PVC and a piece of three-inch PVC with end caps filled with your favourite weight material – such as sand, bird shot or BBs – works even better. What's more, it's a whole lot less messy than working with cement to produce!

But all these minor modifications still did not overcome the one problem that occurred when Art was using his Gizmo to track the "birds"... moving the antenna while transmitting. So, with a little (more) thought and some research on what was readily available, Art came up with a simple motor drive that worked well on Field Day for our local Lambton County Radio Club (VE3SAR) group. It easily allowed us to work through both FO-29 and the International Space Station on Field Day.

## THE MOTORIZED GIZMO

The motor Art used was a .06 rpm 12-volt worm gear motor that's available on eBay for about \$14 (US). He mounted it on a quarter-inch aluminum plate base (2 inches by 4 inches) and attached it to a 3/32-inch brass plate of the same size using longer standoffs to mount that plate to the base.

Next, he bored a 5/8-inch hole in the upper plate so the Gizmo Tee could pass through to the 6 mm shaft of the motor. Then, instead of having The Gizmo freely rotate, Art used a piece of 5/8-inch brass machined to 3/8-inch and bored out to 6 mm. The 5/8-inch brass piece was about 1.5 inches long and machined to about three-quarters of an inch. Art then soldered the brass rod into the copper Tee of The Gizmo.



The original Gizmo Tee with bronze bushings.



The new Gizmo Tee fabricated from PVC.



Another "roll your own" version of the Gizmo counterweight can be made from large PVC sections. Fill it with your choice of weight material.

Art then drilled the 3/8-inch shaft so as to allow for placing a set screw in it and then tapped and threaded it to accommodate the 6-32-inch screw that he had chosen.



## THE CONTROL BOX

Next, Art fashioned a motorized control box using a double-pole, double-throw, "centre off" switch and a momentary press button switch.

He added a few Anderson Powerpole connectors and a length of speaker wire, which allowed him to control The Gizmo and antenna from his operating position as needed.



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The motorized Gizmo and Arrow-style antenna makes for a complete, remotely controlled satellite Earth Station.

In the photos, note the 8 mm pillow block that he added to the original Gizmo mount. Unfortunately, this addition resulted in an interesting problem.

When it came time to test this "new and improved" Gizmo, Art gave the motor to his faithful "Beta tester" (that would be me, your humble author) to test it out on a tripod mounting.

While tracking FO-29 one day, I soon found that the weight of the antenna stripped the set screw because Art was forced to reduce the 3/8-inch shaft to 8 mm. That, in turn, only left 1 mm of "wall", which was simply not enough to hold the tapped set screw. As a result, it stripped it.

## A MODIFICATION TO THE MODIFICATION

Next, Art contemplated using a 10 mm pillow block, but that was somewhat larger than what he wanted use. As a solution, he used a piece of quarter-inch brass rod, turned it on his lathe down to 6 mm.

**Note:** placing the shaft in a drill and applying a file would work just as well since a small amount of metal is being removed; one-quarter inch is about 6.34 mm).

Art then used a Dremmel tool and ground off enough of the rod to match the size of the motor shaft and soldered the piece into the end of the 6 mm shaft. He ran this through the pillow block and tightened the set screws on the pillow block. He then slid this sub-assembly over the motor shaft and mounted the pillow block on the upper plate.

Both Art and I have since found that this modification of the "Gizmo Motor 1.2" assembly works quite well. He also notes he has an idea on how to make a motor mounting that will give directional information which he plans to call "Gizmo motor 2.0".

*But that will be for another article.*



The motorized Gizmo mount showing the worm gear, 12 volt motor and pillow block.



This view shows how the aluminum rod of the motorized Gizmo slips into (and is secured to) the Arrow-style satellite antenna.

## BUT WAIT, THERE'S MORE!

Although this method worked well for our first Field Day trial, Art was *already* thinking about improvements. First of all, the original design placed a lot of torque on the motor shaft so to relieve some of the torque-induced stress, Art made a minor modification (which we'll call "Gizmo Motor 1.1").





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## FOX-1 SATELLITE UPDATE

At press time (mid-September), a firm launch date for AMSAT's Fox-1A satellite had been set for early October so, hopefully, by the time you read this, Fox-1A may *already* be in orbit. Fingers crossed that all goes well. However, remember that what we are doing here is "rocket science" and even the "big boys" of the satellite launch industry still get it wrong on occasion.

## FOX-1D GETS A RIDE

In response to a breaking opportunity, AMSAT and Spaceflight Inc. recently announced that they have now arranged for Fox-1D to accompany Fox-1C on the maiden flight of their SHERPA deployment system on a SpaceX Falcon 9. Fox 1C was also recently renamed "Fox-1Cliff" by the AMSAT Board of Directors in honour of Cliff Buttchart, K7RR (SK), one of AMSAT's long-standing benefactors.

As part of the Fox-1 series, Fox-1D is identical to Fox-1Cliff, but with different frequencies. It will also carry the University of Iowa HERCI (High Energy Radiation CubeSat Instrument) radiation mapping experiment as a hosted payload.

The first launch of Spaceflight, Incorporated's. "SHERPA" deployer will now carry both the Fox-1C and Fox-1D satellites. (Courtesy: Spaceflight, Inc.)

As with Fox-1C, once in orbit Fox-1D will provide additional (selectable) U/V or L/V repeater capabilities and will be capable of downlinking Earth images from the Virginia Tech camera experiment.

Launch for both satellites (Fox-1C and Fox-1D) is currently planned for the first quarter of 2016.

## WON'T THEY BE TOO CLOSE?

One of the first questions I asked our experimenters about this latest flight opportunity for Fox-1D related to the timing of their availability to ground stations. Specifically, as Fox-1D is now set to fly on the same launch as Fox-1C, won't this mean that we'll have virtually identical satellites overhead at the same time?

Our "orbital gurus" have now assured me that, over time, the two satellites will be slowly drifting apart to the point that there will eventually be a significant variation in the timing of their availability over any one spot on the Earth.

Eventually, as one satellite sets, the other may just be rising, thereby providing you with yet still *more* satellite "talk time" at approximately the same times each day.

Needless to say, as this is yet another launch that AMSAT has had to pay for (albeit for a cut-rate) additional donor support is still *sorely* needed to offset the high costs associated with the launch of Fox-1D in addition to Fox-1Cliff.

Please visit the AMSAT website at <http://www.amsat.org> to support this launch and help keep Amateur Radio in space. Just click on the "Donate" buttons at the top right of the page.

## WRAP UP

That's all for this time. In future columns, I'll continue sharing AMSAT's history with you. In the meantime, stay tuned to the AMSAT website (and the AMSAT News Service) for all the very latest happenings about our (hopefully) ever-expanding "crop" of Amateur Radio satellites.



## FREQUENCY AND MODE DATA

Satellite	Mode	Uplink (MHz)	Downlink (MHz)	Beacons (MHz)
Fox-1A	U/V (Mode B)	435.180	145.980	FM Voice
Fox-1B*	U/V (Mode B)	435.250	145.960	FM Voice
Fox-1C*	U/V (Mode B) L/V**	435.300 1267.300	145.920 145.920	FM Voice FM Voice
Fox-1D*	U/V (Mode B) L/V**	435.350 1267.350	145.880 145.880	FM Voice FM Voice

## IS THAT RACKET CW?

As a novice Amateur operator first licensed in 1988 with the call VE3HKC, I confess I was always fascinated with the different types of chatter on the CW portion of the bands. Early on I primarily did CW ragchew at a modest pace (5 to 10 wpm). I did weekdays because on the weekends there was usually a “racket” going on. I had no clue what was going on.

Over time I learned that the weekend racket was a contest. I could not believe how fast these ops were. I hypothesized that no human was actually behind the sending or receiving – it must be a machine.

In a CW contest you will hear a calling station known primarily as the “run” station. He is sitting on a frequency calling for stations to respond. In most contests the responding stations known as “search and pounce” (S&P) or “hunt and peck” station simply responds with their call. The run station will respond with the call of the S&P station and the report. The S&P station will then respond with their report and the contact is complete signaled by the run station either sending “tu” for “to you”, QSL, CFM or 73.

My first exposure to contesting was through Field Days. It was there I found out that real people copied fast CW. We had a mix of young and old as well as retired railroad ops.

Over time, I grew into an S&P CW op on Field Days. I would listen to a calling station repeatedly to get their call and report in the log. Once I was confident I had it in the log correctly, I would throw out our station call and I was shocked by how fast some ops would come back with our call and their report. It seemed they must be superhuman. Then I saw Tony, VE3RZ, work our Field Day station. He seemed greased lightning fast and used no external devices to decode. Clearly this was a mortal possibility. I wanted to see if I could be that op.

Tony, VE3RZ, introduced a number of us to contesting. Peter, VE3HG and I were not far apart and set up modest stations with a triband and wires. We ran several contests from both Peter and my QTH. Greg, VA3GGF, Dennis, VE3JQA, Ian, VE3ESH and others participated. At that time, neither Peter nor I could run on CW. Dennis, VE3JQA, could run and he was the youngest of us; he inspired me, he gave me hope.

*I dreamt about running but how could you get to be that fast?*

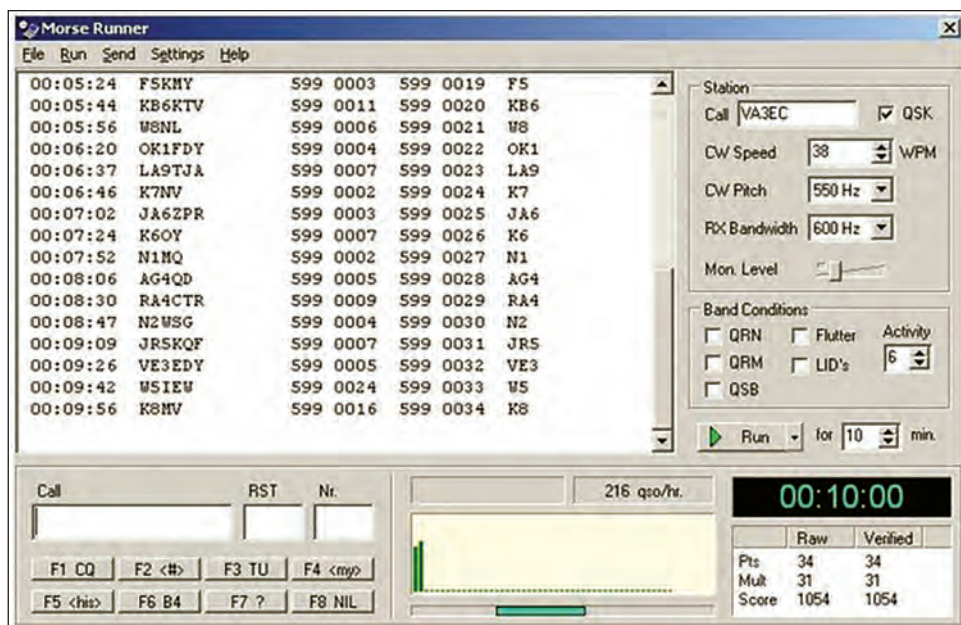


Figure 1: A screenshot of Morse Runner from my best effort 10-minute run as of January 2012.

## LEARNING TO RUN

Peter, VE3HG and Greg, VA3GGF, attended the Dayton Hamvention in 2010 and took in a presentation from a young Amateur (Calvin Darula, K0DXC) on how to get your CW up to 50 words per minute. At the time I was the tender age of 55. The old adage of “you can’t teach an old dog new tricks” haunted me. We have all heard this, however I believe the old dog chooses not to learn. I decided I needed to eat my own cooking.

Calvin’s presentation stated a commitment of 10 minutes a day on a Morse trainer program was all that was required to achieve 50 wpm. He recommended two programs; one was Morse Runner, a public domain program. I downloaded it, opened my calendar and put in a 10-minute segment after dinner every day *forever*.

I started off as prescribed and did 10 minutes a day. I set the speed initially at 18 wpm and the activity level at 4 in June 2010. (You can start at whatever you like down to 10 wpm.) I ran for 10 minutes and crept along with lots of errors.

The next day I went at it again with fewer mistakes. After about a week, I ran the 10 minutes and then I raised the speed. By August 8, 2010 I was running at 28 wpm with a rate of 142 QSOs per hour. Wow, I picked up 10 wpm in two months! This was a milestone since most running stations in contests average around 28 wpm. However, most running stations can copy faster.

Figure 1 shows a screenshot from my best effort 10-minute run as of January 2012.

To be really committed to improving, I stopped using spots in contests. Spots are contact information about remote stations shared on the web. Most contest programs, such as N1MM, enable you to post a spot and use a posted spot on the band map just by clicking on it. Clicking on those postings sets your rig to the right frequency (assuming you have a rig interface) and puts the call in the log window. I chose not to use this feature to force myself to get the call from my head on my own.

There were a number of things I experienced as I continued to practice. First, practice became a habit. If I missed my practice on any given day, I felt something was missing. When practising, I can’t do anything else. It became an escape. It’s amazing how in the real world you can get stuck on a problem, stop, do 10 minutes of Morse Runner and go back and see a solution to that same problem that prior to practising seemed unsolvable.

As a result of practice, I got better working pileups – with as many as 10 deep on the simulator – and with my ability to pick out one call and work it. I found myself picking off the “Low and Slow” or the “High and Fast”.

When in a real contest, this became very handy in search and pounce mode. I assumed the op might respond like I did to the simulator. I would drop 50 or 75 hertz below the pileup or go up the same and throttle the speed and often break the pileup.



My search and pounce performance improved in real contests with rates of over 100 QSOs (contacts) per hour for over an hour because I could get the run stations call the first time I heard it. This helped me to identify dupes (duplicate log entries; you are only permitted to work a station once per mode per band) quickly and for the big gun stations, who identify once after a number of QSOs, I could get their call in one shot.

Through practice, I developed techniques to manage zero beat situations when running. Zero beat is when two or more stations at exactly the same frequency appear on top of one another responding to your call as the run station.

I developed two responses in this situation: first, I would simply wait for one of the stations to send their call sign again; hopefully only one would send ahead of the other and I would grab at least two characters to send back to isolate that stations. Morse Runner requires at least two characters in sequence to be correct before a station will respond. It can be any two characters sequentially correct at the beginning, middle or end of the call.

If waiting resulted in stations coming back at identical times such that I could not separate them, then I would call again over top of them to keep my rate up on the simulator. This may sound brutal but there is no protocol to tell these stations (who likely can't hear each other) they are on top of one another. Fortunately, in real contests I have not had to resort to this technique and I only use it as a last resort if the stations simply remain in step and can't be isolated after several tries.

If you have searched and pounced and can't believe a loud running station can't hear you, it is likely you are zero-beat with others; try TX offset.

Dealing with the zero beat dilemma when running also helped me understand how some running stations react to this situation. With as little as 10 to 15 hertz difference, you can distinguish yourself from the pileup and be heard. Most people who work spots have synthesized rigs with excellent frequency accuracy. With a newly posted spot, several stations routinely land on the exact same frequency trying to work the running station. If you don't use Tx offset, you will not stand out from the crowd.

In contests, I almost always run low power and, on rare occasion, I use high power.

With a beam and half decent conditions, you can work the world. I was able to run on 15 metres in the ARRL International DX CW Contest in February 2012. I ran for about an hour at a rate over 200 per hour – a personal best!

Now in contests, I am amazed at the multipliers I get when running, especially in the North American contests.

Multipliers are assigned for the first contact in a unique location – for example the first contact in a state in either a QSO Party contest or Field Day.

I believe more contesters search and pounce than run, likely because they are comfortable not running.

If the only station on in South Dakota does not feel like dealing with a huge pileup or can't run – or wishes only to search and pounce – you may never get him if you don't run. Even if you never run, I believe learning to run will definitely improve your S&P speeds.

The letters S and H are still a challenge, but practice makes perfect. I can get the call and an exchange very reliably, but don't ask me a question. I ain't that good... yet!

Ten minutes a day pass quickly. If you get past the first three weeks of daily practice, you will have established a solid habit. Use headphones or earbuds. Set the speed and activity so you are successful and don't beat yourself up. Raise the speed when you run error free for a few days and take baby steps.

I use the software on my work laptop and with earbuds while travelling. I have practised in restaurants during lunch, on airplanes and whenever I need to escape reality.

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As of June 2015, five years after hearing how to get my speed up, I am now at 47 wpm practice speed with activity level 8 on Morse Runner. I still do at least 10 minutes a day.

I worked over 1,200 QSOs and a million points in the ARRL DX CW Contest. Last fall I worked CQWW CW Multi-2 (two continuous run stations) with Tony, VE3RZ and Darrel, AB2E, at VE3RZ's QTH. We did over 5,000 QSOs as a team. That was my second year at VE3RZ and I am confident he would not have invited me back if I had not carried my weight.

Many thanks to Alex Sovkoplyas, VE3NEA, for developing Morse Runner and distributing it freely. It is an incredible contribution to the Amateur Radio community!

Special thanks to Calvin Darula, K0DXC, the young ham who presented at 2010 Hamvention. Here is a link to his presentation: [http://www.kkn.net/dayton2010/How\\_to\\_Become\\_a\\_50\\_wpm\\_CW\\_Wizard-K0DXC.pdf](http://www.kkn.net/dayton2010/How_to_Become_a_50_wpm_CW_Wizard-K0DXC.pdf)

In conclusion, I believe old dogs can learn new tricks (old hams too). You just have to see yourself accomplishing them and resolve to pay the price, which in this case is 10 minutes a day.

# To Digital or not to Digital? That is the question.

Derek Hay, VE4HAY

I feel that today's age of Amateur Radio can be compared to its early days when FM was just coming into existence, but only on a worse case scenario. Let's call that period "the olden days", when everyone had AM receiver and transmitters. Continuous wave (CW) was everywhere and some people were using Single Side Band. Everything was tubes back then as well. We were in a steep learning curve with FM. Many were no doubt pondering if they should invest in this mode of modulation. Who would they talk to? Who else had FM capability?

Fast forward to today and you rarely hear an AM signal on Amateur Radio anymore. Ever wonder why?

On the HF bands, SSB has taken over as more signal is able to get out and through the vastness of our world, thus providing greater long-distance communication than using plain old AM. CW, while still relevant, has also given way to phone as a preferred method of communication. Especially when we can simply change bands when conditions change to almost ensure our signal is heard. Yes, CW can get through when conditions are at their worst. But so can other modes on HF – and even better and faster than CW.

On the VHF and higher frequencies I have never heard an AM signal. Everything there is FM with some SSB (very little) for those who are looking for grid squares and some DXing. Now I am not saying that we should use AM with its scratchy, noisy signals. By no means would I suggest that. FM is a much superior modulation method of communicating. And by superior I mean the quality or clarity of the signal transmitted and received as compared to AM, SSB or even CW. FM is the standard for the very high frequencies.

***This article is about leaving our glorious FM behind and moving to digital. But herein lies the quandary: which mode of digital should we go with?***

All three of the big name manufacturers have their own digital encoding scheme or codec (short for coder/decoder: a device that encodes or decodes a signal). And guess what, they are *not* compatible with each other.

Icom has D-STAR: Digital Smart Technologies for Amateur Radio is a digital voice and data protocol specification for Amateur Radio. The system was developed in the late 1990s by the Japan Amateur Radio League and uses frequency-division multiple access and minimum-shift keying in its packet-based standard.

Yaesu has Fusion or C4FM: Continuous 4-Level Frequency Modulation is a form of frequency modulation where the carrier is shifted in frequency at a particular rate to a particular location around a centre frequency. There are four positions, hence the name, and this allows for each of the four "states" to represent a binary number. Each state is known as a "Symbol" which contains two bits of information. C4FM modulation may be viewed as a type of Differential Quadrature Phase Shift Keying (DQPSK). Each symbol is shifted in phase by 45 degrees from the previous symbol. Although the phase – and hence the frequency – is modulated for C4FM, the amplitude of the carrier is constant, generating a constant envelope frequency modulated waveform.

Kenwood at this time does not seem to have an Amateur Radio digital standard. However, their commercial side of the business is using NEXEDGE which is basically NXDN – a very narrowband protocol employing 6.25/12.5 kHz FDMA technology. Data is transmitted using 4-level frequency-shift keying (FSK) modulation.

NXDN uses the AMBE+2 vocoder (codec) for digital audio. This combination provides better weak-signal voice quality than for analog FM. For an equivalent transmitter power, NXDN is represented as having a wider range and slightly better multi-path characteristics than analog FM in typical RF environments, specifically at the 12 dB SINAD threshold. The transmission bit rate is 4800 bits per second.

Motorola and a number of commercial radio companies are using Digital Mobile Radio (DMR), which is an open digital mobile radio standard defined by the European Telecommunications Standards Institute (ETSI) in Standard TS 102 361 parts 1-4. DMR is used in commercial products around the world, and along with P25 Phase 2 and NXDN these are the main competitor technologies in achieving 6.25 kHz equivalent bandwidth using the proprietary AMBE+2 vocoder. DMR and P25 Phase 2 both use two-slot TDMA in a 12.5 kHz channel, while NXDN uses discreet 6.25 kHz channels using frequency division.

Of all of the above, none of these digital formats will talk to each other. While some (Kenwood and Motorola) are using the AMBE+2 Vocoder, they will still not talk to each other since one is using 6.25 channels and the other is using a time division 12.5 channel space. Never mind the fact that one is TDMA and the other is FDMA.

## ***If you build it, will they come?***

Both Icom and Yaesu learned very quickly, that Amateurs are fickle and, in order to promote their system, they either gave away or have greatly reduced the cost for a digital repeater. My personal view is that these companies believe that if a repeater system is available for use in any geographical area, then users will buy a radio to access that repeater. Well this worked fine in the beginning, but now there is more than one digital repeater in many geographical areas and, as such, more than one format. So now what do you do when some of your fellow hams buy into one format and others buy into another? Once again you are stuck with the Beta vs VHS scenario.

In May 2014, Jerry Wagner of Connect System in California, announced his company's plans to revolutionize Amateur Radio with the launch of a new digital voice radio supporting both Digital Mobile Radio (DMR) and Digital Smart Technologies for Amateur Radio (D-STAR) in one box called the CS7000. The product would also have room for the addition of other codecs for other digital formats as well. At the Dayton Hamvention in May 2015, he had to fend off questions about his planned release of the CS7000, which has yet to materialize. There is still no firm date as to when it will be released.

In June 2015, Friedrichshafen – which might be the world's largest International Amateur Radio Exhibition (just don't tell our American neighbours about its size) – celebrated its 40th birthday. A collaboration of three groups brought top level executives from Icom, Yaesu and Kenwood together for the promotion of an idea for Amateur Radio: the "Initiative New Radio" (<http://www.newradio.eu/?lang=en>).

Essentially, the New Radio needs to have an open source firmware platform enabling software developers to create new applications for innovative experiments in the Amateur Radio Service. Two-way radios should no longer look like they did in the 1970s and should include modern technology, graphical user interfaces and a colour touch screen to avoid multi-functional buttons. They should also be about the size of an iPhone6 and have an Android operating system.

You can check out the video of their interaction with the big three manufacturers at <https://www.youtube.com/watch?v=g9ILhug6Lcc>. Some of it is in German and some in English, but the graphics



will aid in understanding what is going on. This was done in collaboration with ÖVSV Österreichischer Versuchssenderverband, DARC Deutscher Amateur-Radio-Club e. V. and IARU Region 1.

This future radio would have the following possible mobile specifications:

- VHF/UHF SDR (138-173 MHz, 400-478 MHz)
- 30-50 Watt HF (class AB)
- N-Antenna connector, integrated combiner
- FM, C4FM, D-STAR, DMR, (SSB) (multi-mode)
- full duplex, crossband repeater
- AMBE, CODEC2
- Colour Touch Screen
- GPS & Bluetooth (Audio+PTT, hands free, data transfer)
- variable IF bandwidth (1 to 2000 kHz)
- detachable front panel / control head, wireless connection to main trx-body
- Android OS (root)
- voice control / voice command recognition
- database for memory channel selection based on GPS position
- Volume and Frequency knob on top
- support APRS+ Map (OSM) + navigation to moving aim
- external accessories: Speaker-Microphone with Bluetooth, SD-Memory card,
- host/client USB enabling data transfer at full rate (500 kBit/sec on 433 MHz)
- DLNA / Miracast / Airplay or similar wireless to screen mirror
- receiver 1-30 MHz, 47-108 MHz, 108-138 MHz AM, 800-1300 MHz
- standard feature set like current models (CTCSS, 1750 Hz tone, repeater shift)
- shutdown timer if engine stopped (low voltage)
- Synchronizing memory and setup with smart handheld radio
- Smart New Radio handheld to act as wireless microphone

Go to [http://www.newradio.eu/?page\\_id=348&lang=en](http://www.newradio.eu/?page_id=348&lang=en) for specifications for base and handheld radios.

As I sit here with my various radios – base stations, mobile radios and a handheld – listening to the local repeaters in analog mode, I wonder if I should switch to digital mode or just stay here in analog until something like the “Initiative New Radio” is actually produced. I already bit the bullet when I purchased my last radio, an IC-9100, and I did get the D-STAR add-in module for it at the time of purchase. And while all my rigs are Icom (except one lonely Radio Shack mobile), one would suspect that I would be going to D-STAR. Well to tell the truth, I am not about to give up three radios that – although a little older and not D-STAR enabled



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– work perfectly fine, just to go out and buy newer rigs with a format that may or may not become a de facto standard.

Here in Winnipeg, Manitoba, like all major centres, we have exhausted our VHF repeater pairs. There are quite simply no more left to assign and our UHF pairs are being grabbed up quickly. We need to be able to use narrowband emissions like 6.25 kHz and to do this we need to be digital.

***Who will win out in the battle for a standard? We may never know.***

This is quite a lot to ask of Amateur Radio which used to be at the forefront of technology, but has now taken a backseat and has let technology come to us. I am going to wait to see how this all plays out.

Personally, I do not see D-STAR, Fusion or DMR going away. What I do see are radios all going the way of the “Initiative New Radio”: with an open source firmware platform, and with downloadable add-in Codecs so that you purchase from an app store to match the format of the repeater in your area.

You may feel differently or have a passion for one format or another just like I did with my old Betamax (until I could not buy any movies for it) or my VHS (until I could not rent movies). I no longer use my Blu-ray nor for that matter a CD player. For now, I’m going old school and waiting with my analog radio. Who knows? I might even switch to 146.520 MHz and make a call on AM to see if anyone is monitoring the channel.

*Derek Hay, VE4HAY, has been certified for Amateur Radio since 1990. He has served and continues to serve on the Executive of many local clubs. He was a RAC Section Manager for VE4 for many years and is currently serving his third term as the RAC Midwest Regional Director. He operates mostly in the VHF/UHF area with the odd dabble into HF especially during Field Day and most recently on 2.3 GHz setting up HamWan in Winnipeg.*

# THE 2015 WORLD RADIOCOMMUNICATION CONFERENCE GETS UNDERWAY

**Bryan Rawlings, VE3QN – RAC Special Advisor – WRC-15**

Let me begin by pointing out that at the conclusion of this article I hope to give you a means of keeping abreast of the upcoming World Radiocommunication Conference while it is in session and in the period after it concludes. For now here are a few reminders of what these Conferences are and why Radio Amateurs – even though we are not in the big leagues – keep following them and making their presence and interests known.

Radio Amateurs can trace their beginnings back to a class of individuals who were variously referred to as “experimenters” in the parlance of early 20th century radio. To be honest, we were then lumped together with persons who might today be better thought of as CB’ers, as well as persons who delighted in being outright nuisances and – finally – true technical experimenters from whom we might rightly claim our heritage.

It soon became apparent – particularly once the true commercial value of radio was realized – that some kind of order would be needed if the new wonder were not to descend into chaos. In 1906, concerned parties met in Berlin and formed the International Wireless Telegraphic Convention. A subsequent meeting in London in 1912 – the year of the *Titanic* disaster and the role radio played in it – cemented international regulation of radio. Since then, under various regimes of international diplomacy – including the League of Nations and the United Nations – through the Comité Consultatif International pour la Radio (CCIR) to today’s International Telecommunication Union (ITU), the administration of the radio spectrum has been accomplished through a set of Radio Regulations which has the status of an international treaty. These regulations, including definitions of radio services and international frequency allocations, are amended periodically by large international conferences which are today known as World Radiocommunication Conferences (WRC).

From the very beginning, the Amateur Radio Service and allocations of radio frequencies to it have formed part of the Radio Regulations. The very beginnings, however, were not auspicious. One of the first acts of the international regulators was to throw “experimenters” out of the parts of the spectrum then thought to be commercially useful. Radio experimenters were given the entire spectrum above 1500 kHz – then thought to be useless. This wasteland was the famous “200 metres and down”. I will leave the interested reader to further pursue the history of Amateur Radio from this point on using your own sources but noting there is – even today – nothing better than Clinton de Soto’s classic *200 Meters and Down: The Story of Amateur Radio* which is still available from the ARRL bookstore.

The current WRC should be getting underway about the time this issue of TCA reaches your tablet or mailbox. WRC-15 will begin on November 2 in the Geneva International Conference Centre and will run until November 27. In the July/August 2015 issue of TCA (page 17) I covered the agenda items which Canadian Radio Amateurs will want to watch closely; and in the September/October 2015 issue (page 22) I reviewed the prospects for Agenda Item 1.4 which seeks an allocation to the Amateur Service near 5 MHz.



**The World Radiocommunication Conference 2012 (WRC-12) in session at the Geneva International Conference Centre in Switzerland.**

That Amateur Radio has prevailed during a century of international regulation is a testament to the continued presence of dedicated Amateurs, who are willing to make the case for the Amateur Service during WRCs and during the preparatory meetings for them which take place continuously in the interval between WRCs. While some of these Amateurs are there in an official capacity, with member state delegations, and others attend under the auspices of the International Amateur Radio Union, which is a private-sector (non-voting) entity of the ITU, much of the Amateur representation comes through Amateur societies who, like RAC, depend on funds for travel expenses generously donated by members – in the case of RAC through the Defence of Amateur Radio (DARF) fund (<http://darf.rac.ca/>).

The 60-metre agenda item continues to line up supporters and detractors in the weeks leading up to the Conference. We are still optimistic that solid arguments and deft diplomacy can make possible an international allocation at 5 MHz. You will be able to keep abreast of this agenda item and of the others of interest to Radio Amateurs and Canadian Amateurs through periodic RAC bulletins. I will also be posting significant events and background on Twitter under the hashtag #RACatWRC15. Watch for a complete report on WRC-15 in a future issue of TCA.





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Terrace, BC V8G 1X5  
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# QUA – A TOPICAL DIGEST

## Low Pass Filters

Low pass filters for HF are constructed from combinations of capacitors and inductors.

The simplest of these, Butterworth and Chebyshev filters, have capacitors connected in parallel to the signal path and inductors in series with it.

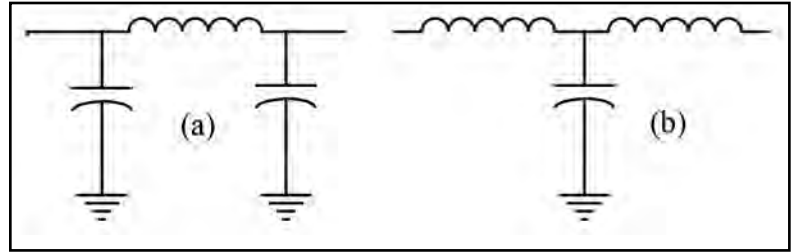


Figure 1: A capacitor input low pass filter (a) and an inductor input filter (b). In general capacitor input filters are easier to build because they require fewer inductors.

Even though modern transceivers have many more features and generally much better performance than old tube or hybrid transceivers, operation of these older radios can still provide a great deal of pleasure.

I really enjoy using my Kenwood TS-520S, for example, and although tuning its output pi circuit to match the high impedance of its tube amplifier to 50 ohms can sometimes be inconvenient, it can also be very satisfying.

That said, however, a transistor amplifier has clear advantages for day to day operation. Whereas a tube amplifier requires retuning for frequency excursions of more than a few tens of kilohertz, a transistor amplifier operates happily over a very wide range.

For that we can thank the transistor amplifier's low output impedance and wide bandwidth. Without a low pass filter on the output, however, the transistor amplifiers of our transceivers would be unuseable due to the harmonics that would be present in their signals.

For these filters the order of the filter indicates the number of components. For example, the low pass filters shown in Figure 1 are both third order filters. Figure 1a is a capacitive input filter whereas Figure 1b has inductive input.

As the frequency applied to the filter increases, the series inductor(s) offer more and more impedance to the signal while the capacitor(s) provide less and less. Consequently, with increasing frequency more and more of the signal is shunted to ground and less passes to the output terminal. With more poles, the transition from pass band to stop band is more rapid.

In addition to order and type of input, low pass filters have different characteristics that depend on the arrangement of components and the mathematics used to calculate the values of the inductors and capacitors.

For example, a Butterworth filter has a flat pass band but above the pass band a gradual decrease in output with increasing frequency; whereas a Chebyshev filter has some ripple in the pass band but a faster decrease in output as the frequency is increased.

A Cauer filter has ripple in both pass band and stop band, but it has a greater rate of roll-off than either a Butterworth or a Chebyshev filter.

### LOW PASS FILTER DESIGN

The ARRL Handbook includes tables of "normalized values" from which component values for various types and orders of filters can be calculated.

However, it is much easier to use one of a number of different computer programs to perform the necessary calculations and, in addition to providing component values, these programs allow you to analyze the performance of the filter.

I have found it to be very interesting to work with several of these programs and I have learned a great deal in the process. As an example, I used a program called *Elsie* (<http://www.tonnesoftware.com/elsie.html>) to design a 5th order Chebyshev filter. The circuit diagram and specifications of this filter are shown in Figure 2.

To see how the filter's performance compared with that predicted by *Elsie*, I also constructed the filter on a small piece of circuit board. You can see a photo of this filter in Figure 3 on the next page. As you can see, I used combinations of capacitors in parallel to make up the values indicated in Figure 2.

The inductors were wound on Amidon T68-2 toroid cores with the number of turns calculated from the formula and AL values provided on the Amidon Associates website at: <https://www.amidoncorp.com/>

This formula is as follows:

$$\text{turns} = 100 \sqrt{\frac{\text{Desired } L (\mu\text{H})}{A_L}}$$

For a T68-2 core  $A_L = 57 \text{ turns}/\mu\text{H}$ .

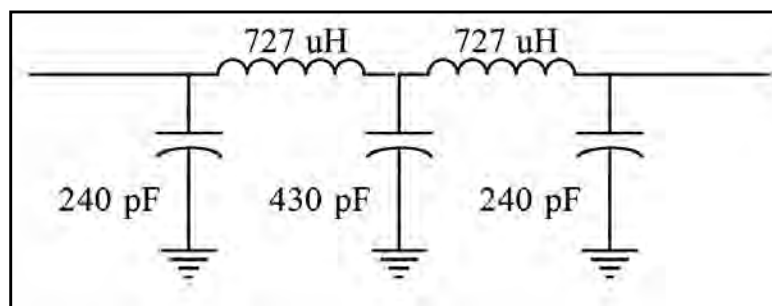


Figure 2: A 5th order capacitor input Chebyshev low pass filter designed using *Elsie*. Cut-off frequency 15 MHz, 50 ohm termination, 0.1 dB passband ripple.

From my calculation I got 11.3 turns so I wound 11 turns on the toroid and then adjusted their spacings until the impedance measured on my LC meter equalled 727 nH.

## RESULTS

I am very fortunate to have an old Marconi spectrum analyzer/tracking generator that my friend Graham Maguire, VE7ZMR, gave me. With this piece of equipment it is very easy to get a visual picture of a filter's performance. All that is required is to attach the tracking generator to the filter's input and the spectrum analyzer to the output, choose the scanning range and sensitivity, and then let the instrument display the result.

Figure 4 shows a photo of the result I got when I scanned my filter. The horizontal scale is 5 MHz/division and the bright line on the left marks 0 MHz. In the vertical scale each of the small lines represents 2 dB (or 10 dB/major division). As you can see, there is a slight amount of variation in the pass band and at about 15 MHz a rapid decline in signal output from the filter begins.

I was very pleased to find a good match between this measurement and the curve predicted by *Elsie*. For example, at 20 MHz *Elsie* predicts -13 dB, at 25 MHz -25 dB, at 30 MHz -35 dB and at 35 MHz, -42 dB.

In theory the attenuation should increase as the frequency increases, but this is not what the spectrum analyzer shows; perhaps because of imperfect shielding between input and output, interactions

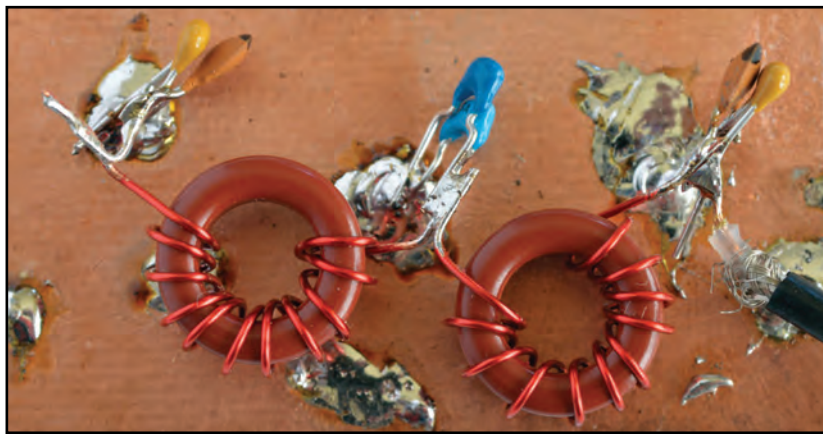


Figure 3: The completed low pass filter.

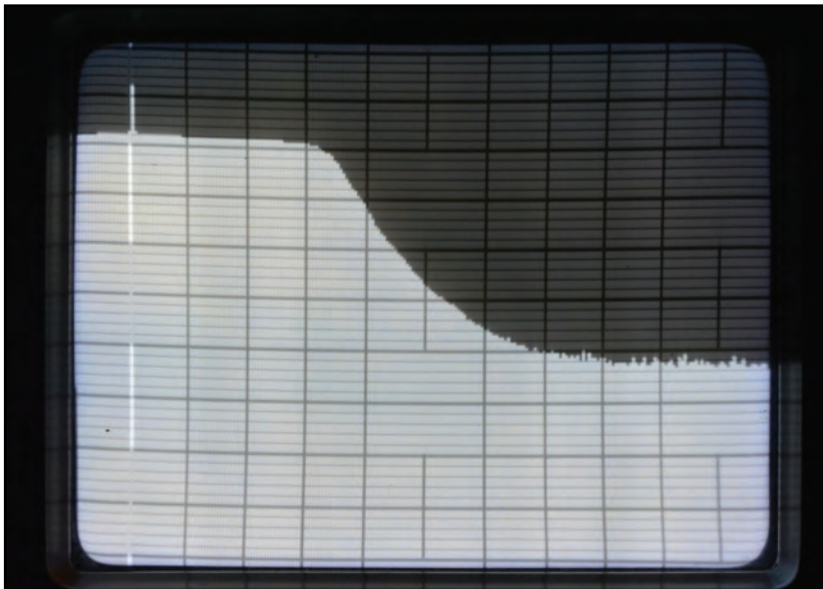


Figure 4: Spectrum analyzer result for the 5th order filter shown in Figure 3. The bright line on the left marks 0 MHz. The horizontal scale is 5 MHz/division and the vertical scale 10 dB/major division.

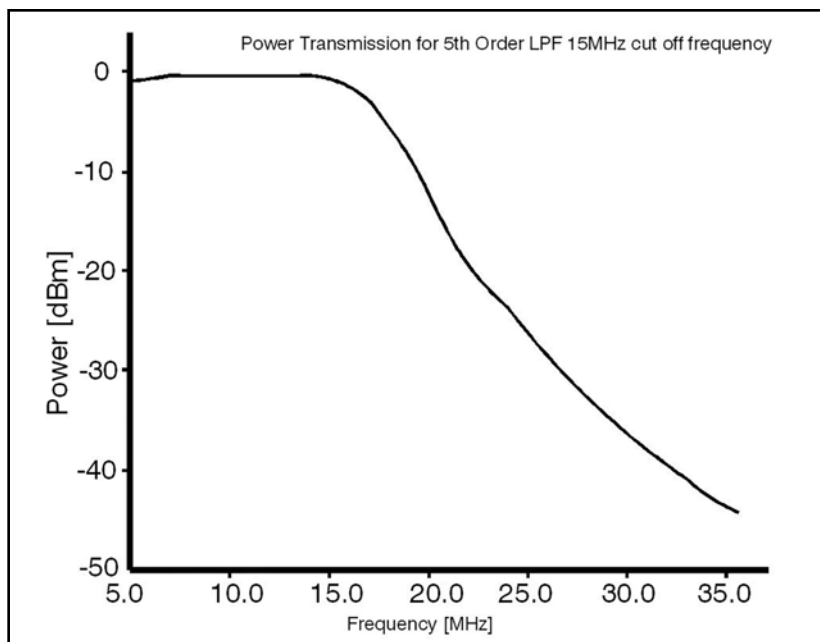


Figure 5: Power vs Frequency for the 5th order low pass filter shown in Figure 3. The data was collected from the MFJ-259B signal source and homemade power meter.

amongst the filter components that are not included in the theoretical calculations and/or a limitation imposed by the spectrum analyzer.

My limited experiments so far have not provided a clear answer.

As an alternative to using a spectrum analyzer I thought it would be interesting to see if I could use other more commonly available instruments to provide similar information.

I began by using my MFJ-259B antenna analyzer as a signal source.

I connected its output through a 20 dB attenuator to the 50 ohm input of my homemade power meter (see page 26 of the January/February 2015 TCA).

The attenuator was necessary because without it, the antenna analyzer output overloaded the power meter.

Over the range from 5 to 35 MHz I found the output of the MFJ-259B was flat to within 1 dB. Knowing this, I now connected the low pass filter between the attenuator and the power meter and recorded power vs frequency at 1 MHz intervals between 5 and 35 MHz.

Figure 5 shows the graph of my results.

Once again I was very pleased with these results because they match those predicted by *Elsie* and recorded by the spectrum analyzer very closely.



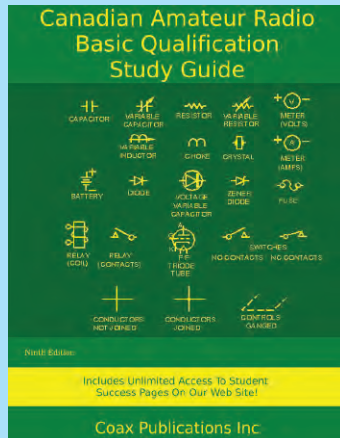
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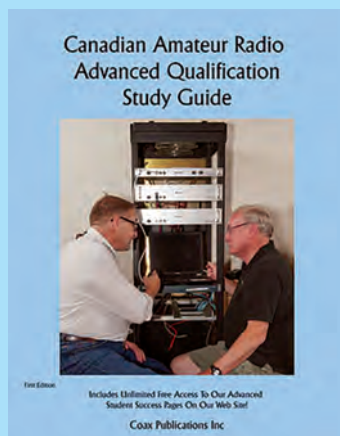


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They show that it is possible to make good measurements without having the luxury of a spectrum analyzer.

A signal generator and an oscilloscope could also be used to make these measurements. For example, the low pass filter can be terminated with a 51 ohm resistor (or two 100 ohm resistors in parallel) and the oscilloscope connected across this resistor.

With an oscilloscope of sufficient bandwidth, quantitative power measurements over a range of frequencies can then be made from the peak-to-peak voltage indicated on the oscilloscope. The limitation here, however, is the oscilloscope's bandwidth.

My own oscilloscope is unsatisfactory for accurate measurements of this type because of its limited 10 MHz bandwidth. Nevertheless, it certainly is adequate for demonstrating the rapidly decreasing signal from the low pass filter as the input frequency rises above 15 MHz.

I hope this description of my experiments with low pass filters encourages some of you to try one or more of the low pass filter programs that are available – and perhaps to try building a low pass filter too.

In addition to *Elsie*, there is a filter design program included with the excellent ARRL book *Experimental Methods in RF Design* and another available from the Almost All Digital Electronics website <http://www.aade.com/filter.htm>. There is also a simple but very easy to use program available from the University of York at <http://www-users.cs.york.ac.uk/~fisher/lcfilter/>.

When you design your filter just be sure to make the cut-off frequency high enough, however. The cut-off frequency is already down 3 dB, or half the power. I learned the hard way that trying to make the cut-off frequency too close to a band edge can result in a lot of power loss at the top end of a band!

If you do some low pass filter experiments or have some comments regarding them I would be interested to know. You can contact me at [ve7bqo@rac.ca](mailto:ve7bqo@rac.ca).



## RFINDER NOW SUPPORTS DMR-MARC WW NETWORK!



RFinder – the World Wide Repeater Directory – and DMR-MARC.net has completed their integration. RFinder now has a regular feed of the DMR Repeater list (MOTOTRBO, a.k.a. TRBO) worldwide. DMR Repeaters are now enhanced with lat/lon QTH data so that RFinder can locate these machines worldwide. RFinder updates these automatically every day at 1100 UTC.

RFinder is a steadily growing worldwide repeater directory which has over 50,000 repeaters in over 170 countries. An annual subscription to RFinder provides access to repeater data through its collections of Apps on Android and iPhone, RadioBuddy on iPhone, web, RT Systems and CHIRP radio programmers.

RFinder's new feature of repeater routing (<http://routes.rfinder.net>) allows finding of repeaters over routes worldwide. One subscription, access to repeater data worldwide, from any computing device on Windows, Mac, Linux, Android, iPhone and popular GPS systems. Realtime radio programming on Android and iPhone is provided by the open source RFinderPi, which is based on the Raspberry Pi. RFinder is tightly integrated with EchoLink both on Android and iPhone, providing one-click connection to repeaters worldwide from the directory!

The RFinder team is excited to continue its release of cutting edge products that support digital communications.

"The proliferation of digital voice modes in Amateur Radio will continue to increase. DMR is an open standard that provides spectral efficiency and most importantly interoperability between vendors of radio equipment. RFinder will continue to support the cutting edge in Amateur Radio," says Bob Greenberg, W2CYK, the creator of RFinder.

- RFinder is the Official Repeater Directory of Radio Amateurs Canada. Canadian Amateurs who subscribe contribute to RAC.
- RFinder is the Official Repeater Directory App of Radio Society of Great Britain. UK Amateurs who subscribe contribute to RSGB.
- RFinder is the Official Repeater Directory of Amateur Radio Society Italia. IT Amateurs who subscribe contribute to ARS Italia.
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- RFinder is the Official Repeater Directory of Deutscher Amateur Radio Club. DE Amateurs who subscribe contribute to DARC DE.
- RFinder is El directorio de repetidor con la base de datos oficial de Unión de Radioaficionados Españoles. ES Amateurs who subscribe contribute to URE ES.

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More info on DMR-MARC can be found at <http://www.dmr-marc.net>



# EVOLUTION OF A WINNING ARRL SS CW TEAM

**Chet Latawiec, VE3CFK**

**It always starts off innocently enough...**

Two old high school buddies, 50 years out of school, got together for a beer and to reminisce about the good old days. About how much fun they had at Field Day and the times they'd set up a station in the middle of nowhere just to have fun. And then came the question: Wouldn't it be fun to relive those days?

The answer: "Yes, but why and where would we want to do that?"

Neither are big testers. Dabble here and there, search and pounce (S&P). No real contest effort. Field Day is their typical contest venture.

Then came an opportunity. The American Radio Relay League (ARRL) instituted a new Multioperator Low Power category for their November Sweepstakes contest. Why not? Something different. It'd be fun!

As newbies to the contesting game, they realized that the Low Power category had a big handicap so Bill, VE3BXI and Eric, VA7DZ, decided they needed an advantage. A rare ARRL section would provide such an advantage. The ARRL list of most wanted sections in previous Sweepstakes contests was consulted, and Manitoba was selected.

"Why Manitoba?", asked Eric.

"Think of it as a DXpedition inside our country!", said Bill.

And so Bill and Eric set off on their exciting new adventure and the VE4DR "Contest-pedition" began. The logistics were developed. The equipment list was established. The wire, the coax, the barrel connectors, the electrical tape, the soldering irons, hammers, ground stakes, laptops, rigs and power supplies... were all added to the list. Food and sleeping accommodations had to be provided and transportation arranged. Clothing for the snow and winter cold was a necessity. The list went on and on. Hmmm.

Everything needed to be packed; not only the items to set up the station, but also to maintain, troubleshoot and provide any necessary repairs. This was turning out to be a major logistics effort – not much different than any DXpedition – just as Bill had foreseen.

This article was published in the May/June 2015 issue of the *National Contest Journal* and is being reprinted with their permission.



Bill, VE3BXI (left) and Dave, VE4XN, with the contest run position in the back.

The competition was getting stiffer. They needed more QSOs and a "Clean Sweep". But how do you accomplish this with low power and an OCF dipole? With 100 watts it is difficult to hold a frequency with wire antennas. You can only do so well S&P'ing. Additionally, a Manitoba Contest Club had been formed! More Manitoba

operators were getting into the Sweepstakes game, so the "rare" MB section was getting...well... less rare. What to do?

## 2013 – ONTARIO NORTH

In 2013, the team decided to take advantage of the new sections added to Canada by the ARRL Contest Committee. Ontario was divided into four sections: Greater Toronto Area (GTA); Ontario South (ONS); Ontario East (ONE); and Ontario North (ONN). This increased the total number of sections from 80 to 83. A review of the previous Sweepstakes results from the ONN area showed that there were only one or two competitors from this section – that would make us a rare section again!

To address the need for better antennas, the team installed a pair of phased 40m verticals at our "ham radio friendly" B&B in Sault St. Marie, Ontario. This was a wise decision as 40m turned out to be our "money" band. With directivity and gain, the antenna played well and gave us the majority of our QSOs. The rare section status of ONN should also give us the Canadian title once again. Wrong! We lost out to VE4EA. But why? We had good antennas and almost no competition from ONN? We were partially correct in our game plan, but we misled ourselves with one major assumption.

Although ONN was a relatively rare section (as were VE4, ND and VY1), it was impossible to identify it as a rare section strictly from the call VA3MN. That's because VA3MN looks like any other Ontario call sign with no obvious section identifier. Although VE4DR identified the station as being definitely in Manitoba and VA7DZ as definitely in British Columbia, VA3MN was just another Ontario call sign. It could be in GTA, ONN, ONS or ONE.

**Next question:** Manitoba? But where in Manitoba? At 251,000 square miles, it's a big place! Having worked in Winnipeg for the previous two years and also staying at a "ham radio friendly" Bed and Breakfast (B&B) in Brandon, Bill suggested it as a location and so they travelled from Victoria, British Columbia (1300 miles) and Sarnia, Ontario (1300 miles) to set up a contest station there for the 2011 Sweepstakes CW contest. They had a single K3 and a single off-centre-fed (OCF) dipole at 25 feet above ground.

Sure enough, around noon on the Sunday of the contest, a lot of operators checked their logs to discover they still needed Manitoba. Eric gathered his courage and, for the first time in his Sweepstakes career, he tried a "run" (calling CQ) rather than just S&P'ing. Somebody spotted him on a cluster, a pileup quickly developed, and VE4DR's score increased rapidly.

**The result?** To their astonishment, Bill and Eric won the Manitoba and Canadian titles that year for multi-low! In part, this happened because there was very little competition; being a generally cautious lot, not overly fond of radical change, most Canadian contestants stuck with the traditional categories.

## 2012 – MANITOBA

In 2012, the VE4DR multi-low team expanded with new members, Vic, VE3AOD and Chet, VE3CFK. Once again the team won both Manitoba (and Canada!) from their previous B&B "ham friendly" location in Brandon, Manitoba.

Reviewing the Canadian scores revealed that the Canadian competition was growing rapidly. Although the team's QSO count increased from the previous year, the team believed that major increases in their score would be essential if they wanted to retain their Canadian Championship title.

The advantage we had in the previous two Sweepstakes had been blown. That is, lost! However, we did settle for the top contender from the ONN section.

## 2014 – BACK TO MANTOBA

Having been disappointed in 2013, the team developed a plan that should result in more QSOs. The secret was believed to be four-pronged: location, location, location and antennas. The call sign advantage we previously held by operating from Manitoba was deemed a necessity. So back we would go to Manitoba. Wire antennas were fine, but to hold a frequency, we needed to be heard. With 100 watts it is difficult to hold a run frequency against the high power stations. We needed yagis and other antennas with gain. And on the higher bands (20, 15 and 10 metres), antenna gain is mostly about aluminium in the air: the more and higher, the better.

*We decided to go back to Manitoba. But this time, we'd be armed with aluminium.*

Unfortunately, our "ham friendly B&B" in Brandon had been sold so alternate station sites had to be considered. Bill, VE3BXI, suggested the Manitoba Amateur Radio Museum (MARM) in Austin and this turned out to be an excellent site. MARM is the wonderful result of Dave Snyder, VE4XN's efforts to construct a ham radio museum. It, too, is "ham radio friendly" (go figure!) and was equipped with a triband yagi for 20, 15 and 10 metres plus wire antennas for 80 and 40 metres. Our plan was part way there with a 3-element yagi gain antenna for 20, 15 and 10 metres, but wire dipoles for 80 and 40 metres were not acceptable to the team.

Bill then constructed a 40 metre four-square with elevated radials. The array was erected in the open field at MARM and turned out to be our secret weapon on 40 metres. We decided to live with the 80 metre dipole for 2014.

We also added a fifth member to the team. Fred, KE7X, brought additional contesting skills to the group as well as in-depth knowledge of the workings of Elecraft's K3. Fred gave an onsite tutorial on contesting with a K3. Thanks Fred! It was invaluable to our efforts.

The result? Not only were we successful in recapturing our Manitoba title, but we also took all of Canada and all of North America in our contest category – multi low CW!



Photo at left:

The 40m 4-square set up on the grounds of the Manitoba Amateur Radio Museum.

Photo below: The VE4DR Team

Fred, KE7X, Eric, VA7DZ, Vic, VE3YT, Bill, VE3BXI, and Chet, VE3CFK.

The VE4DR team thanks MARM and Dave for the opportunity to set up their contest station and use the installed equipment at MARM.

## CREDITS

Bill, VE3DR (VE3BXI), Dave, VE4XN, Eric, VA7DZ, Fred, KE7X and Vic, VA3YT (VE3OAD).

**Photo credits:** the contest team and Dave Snyder, VE4XN.

## 2015 PLANS

More gain antennas! We'll need at least a pair of phased verticals for 80 metres as well as the 40 metre four-square we had in 2014. Yagi antennas for 20, 15 and 10 metres are a must. A unique prefix of a rare section is also mandatory.

*So... will it be the Yukon for 2015?*

Look for us. You never know where you'll find us in 2015.

## MORE ABOUT MARM

The Manitoba Amateur Radio Museum, located in Austin, Manitoba is the result of the Herculean efforts of Dave Snyder, VE4XN. Dave spent many years of effort soliciting approval, funds and equipment and a new building was also erected specifically for the museum. Many Canadian hams, both past and present, have donated equipment to the museum for display; from an early spark gap transmitter to a more recent Collins S-line. It's a "must see" museum for all hams. For more information visit their website at <http://marminc.ca/> or send an email off to Dave at [dsnydal@mts.net](mailto:dsnydal@mts.net).



*An Advanced Class holder in Canada and Extra Class holder (as W2NHA) in the USA, Chet Latawiec is a retired chemical engineer and project management professional licensed to practise in both Canada and USA. He's been an Amateur Radio operator (with the call sign VE3CFK) since 1968. Chet's main interests since retirement have focused on DXing, the ARRL Challenge Award, 160m, contesting and maintaining/developing his remote Amateur Radio site. You can contact him by email at [VE3CFK@arrl.net](mailto:VE3CFK@arrl.net).*



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**The radio... *YAESU***

# FT-991

HF/VHF/UHF  
ALL MODE TRANSCEIVER



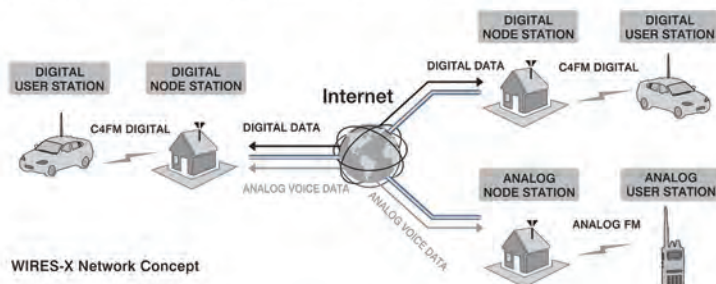
New generation all-band transceiver FT-991 offers full-fledged support for all modes including HF/50/144/430 MHz in a single compact unit

[New Feature] High Quality Digital C4FM voice over the WIREX-X internet VoIP network

- Triple conversion with 1st IF frequency of 69.450MHz for all bands
- Narrow band 3 kHz roofing filter provided in standard configuration realizes excellent adjacent multi signal characteristics
- Features the highly acclaimed FTD series quad mixer, along with a dedicated VHF/UHF mixer
- Highly effective interference removal functions are great for stress-free QSOs on the DX and Contest scene
- Final Stage with Ample Power Reserves: 100 W for HF/50 MHz Bands and 50 W for VHF/UHF Bands
- Advanced technologies fully utilize the potential of C4FM Digital including high-quality transmit audio, AMS, and Group Monitor functions

\* The FT-991 does not support the News Station function or direct HRI-200 connectivity as Digital Node station.

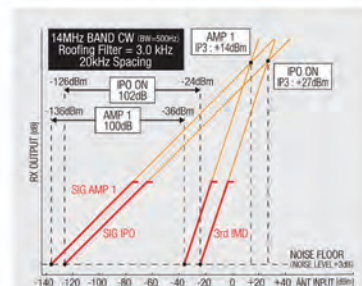
\* Data FR mode (high speed data communication mode) is not supported therefore image send/receive by C4FM digital is not possible.



WIREX-X Network Concept

**C4FM**  
DIGITAL CLEAR VOICE  
Clear and Crisp Voice Technology

**WIREX-X**



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HF/VHF/UHF  
100 W All Mode Transceiver

**FT-991**  
(144 MHz/ 430 MHz 50 W)

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Specifications subject to change without notice. Some accessories and/or options may be standard in certain areas. Frequency coverage may differ in some countries. Check with your local Yaesu Dealer for specific details.



# All Things Digital

## Amateur Radio for the 21<sup>st</sup> Century O21

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## SLOW SCAN TELEVISION (SSTV): PART 2 – MORPHOSIS

**Note:** “SSTV: Part 1 – Genesis” appeared in the September-October 2015 TCA. This article covers analog and not digital radio mondiale (DRM) SSTV. A plethora of SSTV reference material is available on my website so only the most important features, developments and applications are covered.

### 21ST CENTURY SSTV

The beginning of this century began the “golden digital age” of Amateur Radio when both computer hardware and software evolved to the point where a few hundred instead of thousands of dollars could create a powerful data modes station and eliminate expensive, not-so-portable, power consuming, ancillary devices required for each separate mode. All were replaced by various computing devices (desktops to smartphones) running free or low-cost software plus simple soundcard-to-radio interfaces (see Figure 1).

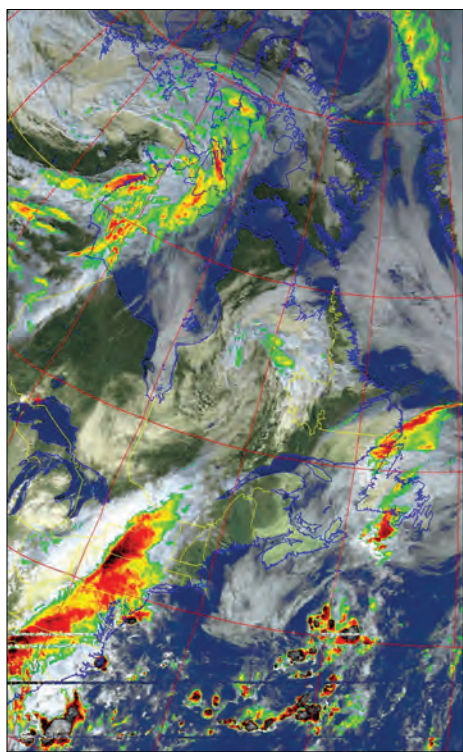


Figure 2: SSTV View From Outer Space. Processed (false colour with precipitation intensities) NOAA 19 wide-angle view over eastern Canada (2015-09-19 at 1812 UTC) as received via real-time radio transmissions on 137.1 MHz.

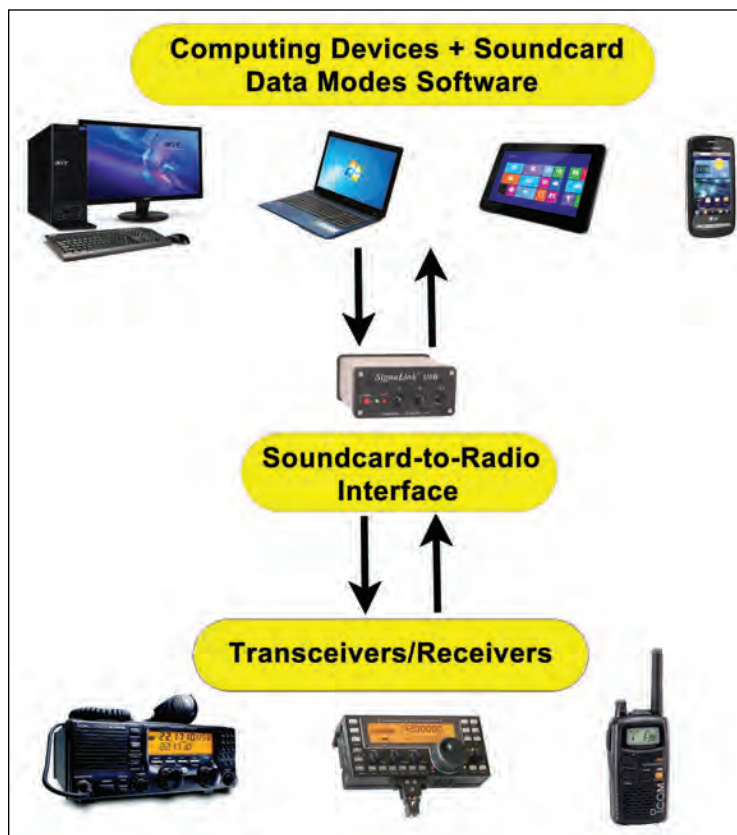


Figure 1: Typical (2015) Multi-Data Modes Station Configuration. Compare this simple setup to the complex ones from “SSTV: Part 1– Genesis”.

back to earth, and their signals are easy for hobbyists to receive/decode – more about this in Part 3 in the next TCA. Their data can be invaluable to other agencies when they are cut off from regular Environment Canada sources during severe weather emergencies – if someone else can provide it (hint, hint).

SSTV and other modes have been adapted by brilliant Amateurs with mind-boggling hardware/software expertise to the latest technologies (tablets and smartphones especially) giving us the ability to snap a picture and transmit it to another location using “real” radio when conventional commercial communication systems (Internet, Wi-Fi, cellular, landline, etc.) aren’t available. This can be very useful for emergency communications (EmComm) as it was after the devastating spring (2015) Nepal earthquakes and ensuing rescue/aid efforts.

### SATELLITE AND BALLOON SSTV

Those “ancient” analog automatic picture transmission (APT) weather satellites or “birds” (NOAA 15, 18 and 19) are still flying high in their forever looping polar orbits continuously transmitting live images (see Figure 2)

Many Amateur Radio high altitude balloon (ARHAB) flights carry SSTV equipment such as Argent Data’s SSTVCAM to send real-time images back to earth during flights that can reach over 30,000 metres before the balloon bursts, with the payload package returning softly to the ground under a parachute canopy – hopefully!

### FSQ SSTV

Murray Greenman, ZL1PBU, a renowned “down under” digital modes pioneer and technical writer, recently announced (September 2015 QST) the new Fast Simple QSO (FSQ) soundcard data mode created by Con Wassilieff, ZL2AFP, with Murray’s assistance. It’s a multi-frequency shift keying (MSFK) mode, designed as a fixed frequency (channelized) sentence messaging system with public service and EmComm in mind, and it can create ad hoc radio-based text mesh networks with



analog FM narrow band SSTV (NB-SSTV) capability! For NB-SSTV, the carrier is centred on 1500 Hz – with a minus 200 Hz shift for black signal levels and a plus 200 Hz shift for white signal levels – but no frame or sync signals are used. The new mode has been added to the latest version of Fldigi and a dedicated free FSQ program by Bob Cummings, NW8L, is also available.

## MMSSTV

While there are many other standalone programs and software suites with SSTV capability (ChromaPix, Multiscan, MultiPSK, MixW, et al), MMSSTV (created by Makoto “Mako” Mori, JE3HHT) is probably the most popular and versatile (for Windows). It’s free, specifically designed only for SSTV transceive, image editing, template/overlay support and logging, plus it works on any “old and slow” Windows XP computer – so don’t throw them out! In 2010, after adding new NB-SSTV modes, Mako stopped further development but released his MMVARI software engine to the public domain so others could integrate SSTV into their own applications as Guy Roels, ON6MU, has with RX-SSTV.

Figure 3 shows my customized MMSSTV display, but not all features and sub-features can be displayed at once so I opted for the main operating screen. At a glance you can see/select incoming/outgoing SSTV images, edit images/templates/overlays, transmit or receive (in the background), see the incoming signal spectrograph and waterfall, etc. Black and white plus colour using various SSTV modes and resolutions are supported but 320 pixels (picture elements or pels) x 256 scan lines and 640 x 496 colour images are the most commonly used.

## SOME MMSSTV FEATURES AND USES

Besides sending/receiving still photographs, images or webcam video frames, one of the less used but extremely valuable MMSSTV feature is its ability to act as a “parrot” SSTV simplex repeater (in-band or crossband). Usually, it’s set up to crossband repeat between the 2 and 10 metre FM bands because Canadian Basic and US Technician Amateurs (without HF privileges) can legally use this type of FM repeater.

With an add-on file transfer protocol (FTP) program or “widget” written by John Benedict, KE5RS, you can create an automatic 24/7 “robot” monitoring station on any SSTV frequency and upload images to the WorldSSTV (Cam) webserver (see Figure 4) and/or to your own web/mesh server. It’s a great tool for real-time propagation tests, RF power comparisons, transceiver alignment, experimenting with different SSTV modes, doing statistical analysis and research, etc.

While working on this column, my monitoring station captured several test transmissions made by Robert Carter, W0QFW, 800 nm (nautical miles) south- southwest of my location (see Figure 5). Robert could use the WorldSSTV webserver and associated personal webpages to “see” what the SSTV “collective” had to “say” about his transmissions.

By collecting and analyzing received images, you’ll soon discover some interesting things. I’ve noticed as the received image signal-to-noise ratio (SNR) decreases, the image disk storage file size increases so it appears that “noisy” SSTV images need more storage space than “quiet” ones do! There’s also a “power cut-off point” where increasing the transmitter’s power doesn’t significantly improve the received image quality.

Received analog images can never be as good as (or better) than the originals because errors are introduced in the image-to-frequency-to-image processing by your soundcard’s analog-to-digital conversion (ADC) and digital-to-analog conversion (DAC) processes. In addition, analog signals consist of an infinite number of points and can’t be digitized with 100% accuracy so

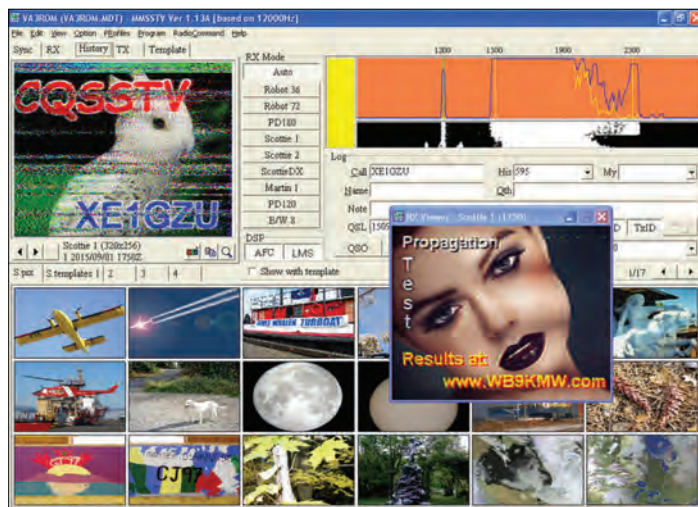


Figure 3: VA3ROM MMSSTV main operating screen.



Figure 4: WorldSSTV webserver map display of other robot SSTV stations around station VA3ROM on various frequencies (mainly 14.230 MHz).



Figure 5: SSTV Power V. Image Quality. SSTV transmissions tests by W0QFW. Propagation was very good and the ionosphere was very stable as indicated by these tests.



some (data) loss occurs. The human eye can't detect this until it reaches a certain level because of our built-in "fuzzy logic" processor (the brain), which can filter a noisy image and approximate or interpolate what it should look like or what it "means"; the data is both the medium and the message, however it can also be easily fooled when it assumes too much!

## ISS SSTV, TOOLS AND TUTORIALS

The International Space Station (ISS) uses SSTV mode PD180 to transmit 640 x 496 colour images to earth to commemorate historic/special space events (see Figure 6). The PD SSTV modes were developed in the late 1990s by Paul Turner, G4IJE and Don Rotier, KOHEO (SK) hence the "PD" with the approximate transmission time (in seconds) after the mode designator (180 seconds or three minutes).

Paul has created an awesome free webcam SSTV program you can use to automatically grab a webcam video frame at intervals (beacon mode), then transmit it via radio (no Wi-Fi, Internet, cellular or landline required).

Alex Shovkoplyas, VE3NEA, wrote a great set of free SSTV tools you can use to remove noise from images, spectrally analyze signals and create various test transmissions.

Larry Peterson, WB9KMW, produced an excellent series of SSTV articles and tutorials (available on his website) with a fantastic web tool to analyze visually similar SSTV images. I used it to compare the Figure 5 unprocessed test images, and between the 20 and 100 watts ones there is less than a 1% data quality/visual difference – 0.83%, to be precise! The difference between 10 and 20 watts was 15.72%, but with some digital noise reduction (DNR) processing you wouldn't see any difference unless you had the original image to compare against!

**Note:** The International Video Communications Association (IVCA) holds weekly Saturday morning (1400-1500 UTC) controlled SSTV nets on 14.230 MHz. The Japanese Amateur SSTV Association (JASTA) is very active and sponsors many SSTV related events.

## SLANT AND SYNC AND SAMPLE RATES – OH, MY!

Slant error (in the vertical) and sync error (in the horizontal) is primarily caused by uncorrected soundcard master (crystal) clock oscillator (MCO) frequency (or "sampling rate") errors, measured in parts-per-million (ppm). The terms "skew" for slant and "phase" for sync are becoming the more preferred terms used with smartphone imaging software (see Figures 7 and 8). A utility called CheckSR can determine soundcard ppm error values or you can use the time signal correction method (see the Slant Adjustment section of the WorldSSTV website).

Older stock (comes with) computer soundcards usually have a "native" sampling rate of 44100 Hz and only one MCO; audio frequencies up to 22025 Hz (the Nyquist rate or frequency) can be adequately digitized ("CD audio quality"). A sampling rate of 11025 Hz (one-quarter of 44100 Hz) was used and only one ppm correction was required for soundcard input/output.

MMSSTV (and other programs) default to 11025 Hz, but today's stock computer soundcards have a native sampling rate of 48000 Hz and two MCOs (one for input and one for output) and 12000 Hz (one-quarter of 48000 Hz) is preferred. However, smartphone internal soundcards are usually fixed at 48000 Hz and their sampling rates are not (usually) adjustable and this can sometimes be problematic.

**Note:** If you have the computing "horsepower" (quad-core processor) you can sample faster but it's not necessary (for our purpose) and really "strains" a computer processor especially when you multitask (run more than one application at the same time).



Figure 6: ISS SSTV. ISS PD180 SSTV image captured during a pass over the Thunder Bay area.



Figure 7: SSTV Slant Error. Upper left image slant error is caused by an uncorrected soundcard sampling (output) ppm frequency error – no one will ever answer this CQ! "Yosemite Sam" images are examples of on-air tests to correct (soundcard) slant transmission error.



Figure 8: SSTV Sync Error. The ISS image is broken in the horizontal (twice) and caused by sampling at too high a rate for the already "overloaded" computer to handle. This sometimes makes it look like slant error and is why the two are often confused.



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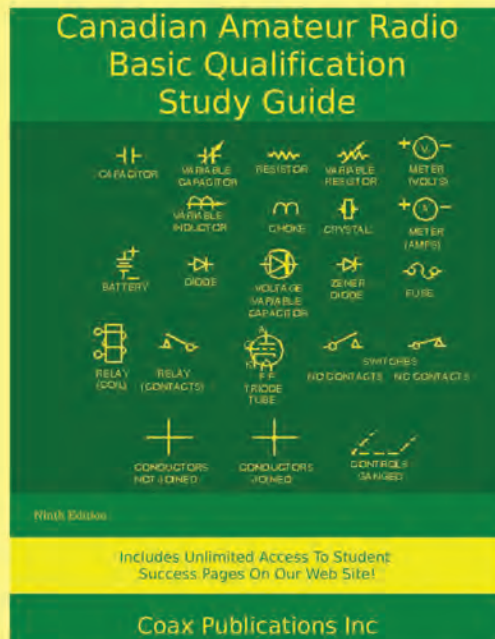
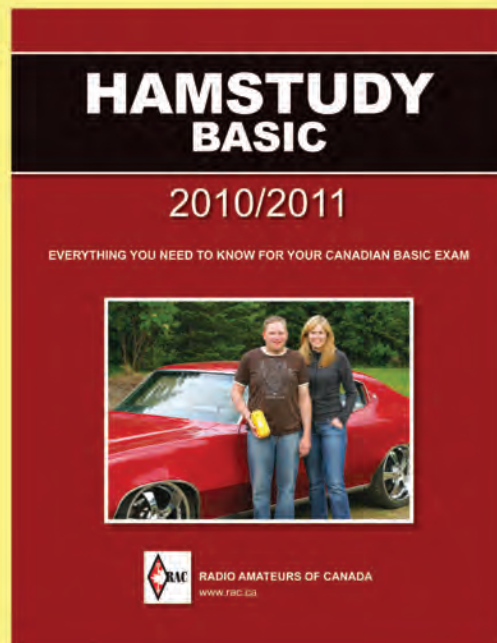
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Note: The Canadian Amateur Radio Advanced Qualification Study Guide is also available. Please see the ad on page 27 for more information.





Figure 9: DroidSSTV receiving test image on an old, recycled Android smartphone.

## SMARTPHONE SSTV

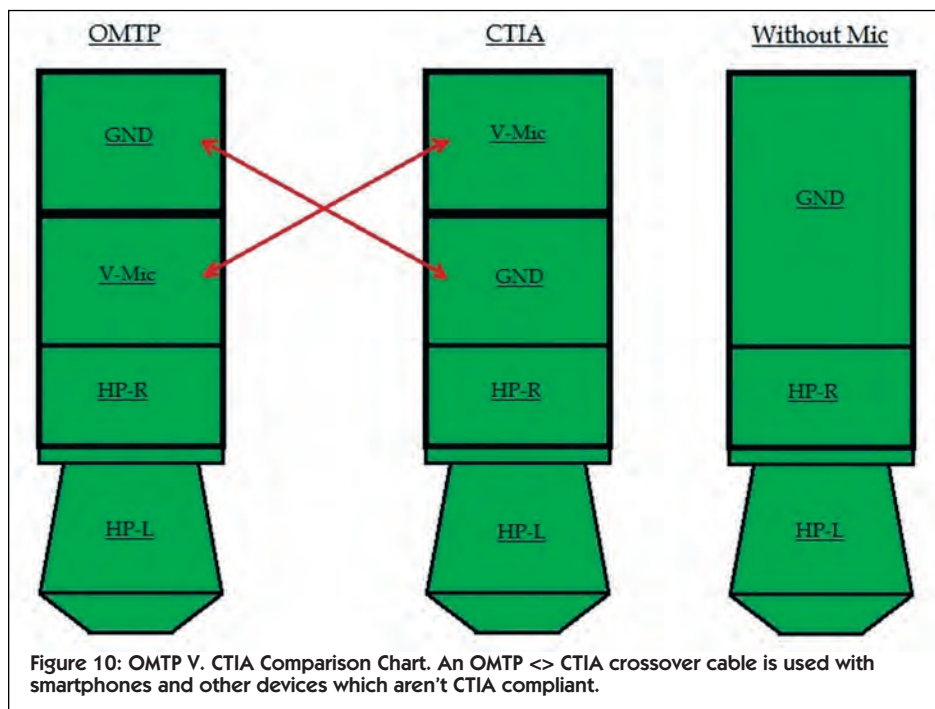
We've used smartphones with the Automatic Packet Radio System (APRS) (see the March-April 2012 TCA), the Winlink 2000 (WL2K) Global Radio Messaging System/Service (see the March-April 2013 TCA), and mesh networks (see the June-July 2014 TCA). Now we can add SSTV with two excellent (commercial) apps: one for Android called DroidSSTV by Wolphi LLC, and one for Apple iOS called CQSSTV (formerly SSTV Pad) by Black Cat Systems.

SSTV transmission is very easy with either app using a standard stereo or tip-ring-sleeve (TRS) audio patch cord and any soundcard-radio interface you already use (Signalink, KH6TY, Donner, Buxcomm, et al), but receive is a different matter (see the caveats below).

DroidSSTV (see Figure 9) is my personal choice because more people have/use Android smartphones and it works on those "obsolete" ones you may have tossed in the closet. It can crop a small section of a very large photograph and just send that instead of the entire image (the more image compression used the more detail/data lost), and it doesn't need the vertical interval signalling (VIS) header (see "SSTV: Part 1" in my last column) to lock on to a transmission already in progress. While it only supports the Scottie and Martin modes, these are the two most commonly used and supported by all SSTV software.

There are two caveats (see Figure 10):

1) Smartphones use a single combination line/speaker and microphone tip-ring-ring-sleeve (TRRS) 4-conductor plug/jack



(2.5 or 3.5 mm) with two different wiring standards: CTIA (all Apple) and newer Android devices (Samsung, etc.) and OMTP used by another group of Android devices (Nokia and Chinese clones, etc.). Google Android has mandated that CTIA become the de facto standard but there are still allowed exceptions.

2) Receive is further complicated by your Android smartphone's built-in electret microphone requiring a low-level DC voltage (anywhere from 1.3 to 2.0 volts). Your interface must take this in to account (use this voltage for transmitter keying) and also switch the microphone from external to internal input. Once properly connected, a tiny headset + microphone icon appears at the top of your smartphone's home screen. A stereo (TRS) headset/speaker audio cable disables the microphone altogether and you'll just see a tiny headset icon.

I use the Wolphi-Link Android smartphone radio interface (see "An AFSK interface for your Android Smartphone" in the May 2012 issue of QST). In a pinch, use the acoustic-coupling method; put the smartphone (or laptop/tablet) next to the radio's speaker/microphone and use either manual PTT or voice/audio transmitter keying (VOX). This works great for text-based digital data modes but not so well with SSTV because any noise mixes in with the audio and distorts the image. But something is better than nothing so give it a try!

**Note:** As an aside, the other reason to prefer DroidSSTV is because the Fldigi team created a free Android app called "AndFlmsg" which provides a plethora of digital data modes but no AndFlmsg FSQ support – yet. You can send/receive very small SSTV images using the MFSK16 (or faster) mode.

## MY FINAL

In Part 3, we'll look up – way, way up – at the polar orbiting weather satellites to capture and decode their APT-SSTV images including embedded telemetry. Happy holidays, and all the best to you and yours in 2016! – 73

## REFERENCES AND RESOURCES

- **Argent Data SSTVCAM**  
<http://tinyurl.com/odnp04x>
- **CQSSTV**  
<http://tinyurl.com/mpql6p>
- **Fldigi & AndFlmsg**  
<http://tinyurl.com/32vguj5>  
<http://tinyurl.com/onao6dd>
- **FSQ**  
<http://tinyurl.com/p4em5ud>
- **G4IJE SSTV WEBCAM**  
<http://tinyurl.com/prq64dc>
- **JASTA SSTV**  
<http://tinyurl.com/ngzhylh>
- **KE5RS SSTV**  
<http://tinyurl.com/qcj5q5k>
- **MMSSTV**  
<http://tinyurl.com/6fn5l8y>
- **RX-SSTV**  
<http://tinyurl.com/7tz3ms7>
- **SSTV Tools**  
<http://tinyurl.com/6n6lkff>
- **VA3ROM: All Things Digital**  
<http://tinyurl.com/og2acxq>
- **WB9KMW SSTV**  
<http://tinyurl.com/qg2prmr>  
<http://tinyurl.com/n9eeaxb>
- **Wolphi DroidSSTV & Radio Interface**  
<http://tinyurl.com/oy89xta>  
<http://tinyurl.com/o49659o>



# My One and Only DXpedition: Part 2

## George Hrischenko, VE3DGX

As threatened in my former article (March/April 2014 TCA), here is the tail end of my one and only DXpedition. When we left the island, most of us hit the bunks, the disembarkation was fast and demanding. Everyone, including the Navy personnel had their fill of the adventure and were eager to get back to Canada.

We knew we had several weeks before that would happen but even on our slow boat, it would. However, we still had one more visit to make: the fabled Galapagos Islands. With a slight detour and some many hours of arrangements, we were granted permission to come ashore. The *Cape Scott* was not able to clear the coral reef that surrounds most such islands, but the barges were easily able to scoot through the openings in the reef to drop us off early for a quick tour of the facilities.

I quickly lost interest in viewing the jumbo tortoises and discovered the only Amateur on the Galapagos Island. He was a former W2 who was hiding out from his ex-wife, beyond the reach of the US law. What a setup! He had a concrete block Inn (common), with all the facilities, including local young ladies as servers and a diesel-electric generating power system for the Inn.

He had made arrangements with the fishermen who came out from nearby points in South America. They would dragnet on the way out for several days through the Humboldt Current (a choice fishing ground) and when they had a sufficient catch, they would head for this island for some R&R in this modern facility. Once they arrived they would offload excess cases of beer and surplus diesel for food and a day or more of leisure loafing. I was not so indelicate as to inquire into how much money was paid in which direction, but since the arrangement was going on for a while a suitable arrangement had been reached.

Add to these luxuries the fact that the lagoon inside the reef was crystal clear and one could easily see right down to the white sandy bottom and salt water. I spent a few pleasant hours frolicking in the lagoon.

As stated earlier, the thrill of watching the placid giant tortoises wore off quickly and, when the few scientific-minded had their fill, it was back to the *Cape Scott* and we were on our way again.

A memorable event occurred later when we were maybe halfway to the Panama Canal on February 15, 1965. Yes, you

guessed it. Canada proudly displayed our new Maple Leaf flag. The official shipboard ceremony occurred at 7 am CST (8 am Ottawa time). What a moving moment! We all assembled on the rear deck while the colour party ran our very own flag up the mast. The memory will stay with me forever.

I often wonder if the *Cape Scott* sailed from Halifax with the new flag four months earlier or if they made it while at sea. After all the *Cape Scott* was a "factory ship", capable of effecting major repairs to our Navy at sea, so sewing up a white flag with a red maple leaf would be simple.

Nothing of any import occurred back to Panama and the trip through the canal was old hat, but my wife Cathy, VE3GJH, was sounding a little frayed so I thought instead of staying with the ship back to Halifax and then flying back to Windsor, I would fly from Panama to Miami and then to Detroit and Cathy could pick me up there. Remember, she was born in Detroit and was familiar with the city. Great Idea! except for what happened. Cathy made all the arrangements for my flight from Miami to Detroit and then my new acquaintance, the Postmaster of the Canal Zone (an American area thanks to the dictator Manuel Noriega), got me on a plane from the Canal Zone to Miami so I had no problems with US immigration in Miami. However, I did have a long layover in Miami and it proved to generate a problem in Detroit.

We left Miami in late afternoon where the weather was balmy and sunny. While we were on our way (remember this was in mid-February) a really bad storm blew into the Detroit area, dumping a load of snow in the area after dark. Cathy had already loaded the five kids into the bedding in the back of our station wagon and had headed for the airport in the northwest section of Detroit. Meanwhile the snow kept piling up. It wasn't too bad on the interstate I-75, but when she left the highway to cut over to the airport she was on unploughed roads with maybe four or more inches of new snow. She had no choice but to keep going. Thankfully, she was an excellent driver, besides which she had five kids as ballast on the rear wheels.



When she got to the Detroit International Airport it was somewhat cleared of snow but I had the joy of driving back home.

Another sidebar, on her trip to the airport she was pestered by a tailgater whose lights were on her all the time. When she got to the airport and stopped, the guy jumped out, ran to her door and thanked her profusely for "breaking trail". He was an inexperienced driver and just followed her tracks to the airport.

When I did get back home and settled into the routine of family life, I had to wade through the piles of QSL cards and respond direct or via the bureau. While I did not chase countries I did work over 67 different countries and over 11,000 contacts – most of them on SSB thereby giving a lot of Amateurs their first contact with Easter Island. By the way, I recently viewed an hour-long documentary about a group who think they solved the mystery of how the statues were moved. Native lore said they walked!

The scientific group did walk a simulated statue of the same size and weight as the real Moai statue, but it required hours of fiddling and shaping of the bottom of the statue. By rocking the statue from side to side, they got it to stagger 50 feet down one of the roads so they believe they solved the problem. It does not explain how a few centuries ago a so-called primitive tribe figured out how to master this to the point where some of the Moai were as large as a modern railway boxcar on end! This marks the end of my memoirs.



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www.phillipboucher.com

### Daily conversations

on your radio with other Amateurs are not the only thing you, as a new Amateur Radio operator, will be doing during your career in this unique hobby. You'll also be reading up on new technology that impacts every aspect of your operations, maybe joining a local club to socialize or provide public service communications, or even participating in one of the many contests that abound. And one other thing that you might be doing is building and repairing radios or other related equipment.

If that part of the hobby is something you are doing now or may be doing in the future, then you'll need the tools to do the job properly. One group of tools that you will need is test equipment, and TCA reader Pat Casey wants to know where to source affordable gear.

Normally, my first response would have been Radio Shack, but they went out of business here in Canada many years ago, along with all their tools, testers and parts. They were actually the best place for Amateurs to get basic parts and equipment quickly and at relatively decent prices. So with the departure of our go-to dealer, where do we get test equipment?

# FRESH ON THE AIR

## — ADVENTURES FOR THE NEW AND BEGINNING HAM

### Where Can New Amateurs Find Test Equipment?

How about its replacement, The Source?

You can still find meters and other equipment that can be used for your testing and repair activities. Prices may not be the best and selection may be small.

One place to get the best selection of test equipment is from the actual manufacturers (and their dealers) such as Fluke, Weller, Teltronix, etc. The manufacturers and dealers carry their full line of equipment, and you should be able to find exactly what you are looking for quite easily by calling them or visiting their website.

However, you may be paying a pretty penny to get what you want. But the selection of test equipment is quite extensive and if you are looking for something specific, this may be the best way to go.

The next places to consider are specialty electronic stores such as Sayal Electronics or Mouser Electronics. Prices here may be cheaper, and you may find something unusual that you need; but then again, maybe not. These places are worth a try though.

Then there are also the online shopping sites such as eBay, Amazon and AliExpress. You most probably should be able to find something quite suitable here for a great price – maybe even with free shipping – but it really is going to be a hit or miss situation, and you may have to search quite extensively to find exactly what you are looking for. Be aware that much of the equipment here will either be used, or be new Chinese-made electronic gear, but the prices could be shockingly low. China is now becoming a powerhouse in the electronics industry, crafting relatively good quality electronic products that are comparable to similar items made in Japan and elsewhere that cost three to five times more money. But even if you find a piece of test equipment for \$20 dollars and it breaks in a year, you could just buy another. That could be quite cost effective for your needs.

Amateur Radio dealers may carry some equipment, and Hamfests and online Amateur Radio sale sites run by clubs or organizations can net you some quality test gear at good prices. You can even try sites like Kijiji and Craigslist. But buyer beware. Even though most Amateurs are honest and upfront, good people like you and me, you will have the occasional goof who is out just to get some quick cash for garbage gear. Be aware and ask to see the test equipment in operation before forking over your money.

But the best place to find a good selection of electronic test equipment at prices that are great to fair – right in your own neighbourhood – is to visit your local hardware store. Canadian Tire, Home Depot, Rona and Lowe's all sell an assorted variety of test equipment, such as multimeters, at relatively good prices depending on the features you want or need, or the type of measurements you are going to make. You may need to visit two or more places or their websites to compare equipment and prices, but the research may pan out in you finding exactly the right piece of test equipment for your needs at a price that is attractive to you.

And remember, test equipment is not the only thing you can find in hardware stores. Don't overlook soldering irons, solder, batteries, precision screwdrivers, and other equipment and tools that will enable you to experiment, repair and take your interest in Amateur Radio to a more hands-on level. Do your research, compare equipment and prices and you should find good quality test equipment at good prices from the sources listed above.

### Want to Build Something?

In line with this column on finding test equipment, if you do want to delve into building stuff, why not check out Youkits (<http://www.youkits.com/>). They sell kits for SWR and power meters, antenna analyzers, and even CW and SSB HF transceivers. If you have an HF endorsement and are looking for a kit or even just want to get into HF operations inexpensively, check them out. And if you do buy, build and use something from them, drop me a note. I am not in a position to acquire anything from them right now, but I do find their equipment fascinating. I'd love to hear how you like the equipment.

### Transmission Tidbit:

Write me via the magazine; email me at [phillipboucher@gmail.com](mailto:phillipboucher@gmail.com) or via my website at <http://www.phillipboucher.com>.

My book, "The Almost Complete Guide to Yaesu's VX-6R", is available in PDF for \$14.95.

Visit <http://www.phillipboucher.com> to order. It's also available in Epub format at Amazon Kindle at <http://www.amazon.com/Almost-Complete-Guide-Yaesu-VX-6R-ebook/dp/B00IWN7SJI>.



# Have You Tried Six Metres?

**Tom Hardy, VE4AKI**

The six metre band is the lowest frequency VHF band and exhibits a unique combination of propagation modes that present a variety of operational opportunities and challenges.

Reliable short distance communication is easily achieved with moderate power in both SSB and FM modes. Long distance communication is possible using modes such as sporadic E, auroral propagation and even F2 layer propagation. These modes do not provide the day-to-day reliability that HF does, but when conditions are right amazing contacts can be made.

Another advantage of the 6m band is that antenna size is significantly smaller than HF due to the higher frequency. Six metre antennas are easier to homebrew and fit into reduced space easier than HF.

Getting on the 6m band is relatively easy. Many recent models of HF transceivers cover 6m and if you have one of these you are halfway there. An alternative method if you have an HF transceiver is a transverter. Having been off 6m for a while this is the method I used to get back on this band. On the used market an HF to 6m transverter can be had for less than \$100. They are easy to hook up and use and put out about 10 watts. Previous experience with 10 watts and a 3-element Yagi antenna resulted in contacts throughout North America and as far as South America.

My current 6m station consists of a Ten-Tec Scout feeding five watts to a Ten-Tec 1208 transverter. This puts out eight watts to a reduced size 3-element Yagi beam at

a height of six metres on a rotatable mast. It is fed with about 12 metres of RG-8X coax.

Lacking a tower, the mast is supported by the railing of my deck and is about two metres from my property line.

This location necessitates a compact beam to stay within my property. The mast is rotated when necessary by the "Armstrong" method – that is, manually. Results with this configuration have been quite satisfactory with contacts across the US and Canada.

I'll provide a bit more information on the antenna to show how easy it is to make a gain antenna for 6m. The antenna starts out as a standard yagi with a boom length of two metres. The boom is made of 25 mm by 25 mm wood and the elements are mounted to short crossarms also made of wood. Element spacing is one metre.

The reflector and director elements are one-metre long which is about 70% of full size. The element are made from 9.5 mm tubing salvaged from a discarded TV antenna and are mounted to the crossarms with insulated clamps. The reflector and director are brought to the correct resonance with a centre-mounted coil of 16 gauge wire on a 12.7 mm (0.5 in) PVC coil form. This requires about 12 turns for the reflector and six turns for the director.



**The beam on a short mast for testing.**

The driven element is constructed using a different method. One metre long 12.7 mm (0.5 in) PVC tubes are mounted to the crossarms with clamps fabricated from galvanized plumber's strapping.

At the centre of each element, one half is wound a 7-turn coil of 16 gauge insulated wire. The wire is fed through small holes and extends to each end through the centre of the tubing. The wire is anchored at the ends with ring terminals and machine screws.

At the outer end of each element half, a 150 mm stiff wire pigtail is added for tuning purposes. The coax feedline (RG-8X) is matched to the driven element with a hairpin (40 mm x 300 mm).

No balun was used. A small aluminum mounting plate and a single TV type U-clamp mount the antenna to the mast.

SWR from 50.0 to 50.25 is about 1.5:1 and could probably be improved with more adjustment. This antenna has performed with noticeable directivity and fits within my space limitations.

So there you have it, a basic and effective station for the magic band. Limited cost and compact size are its features, with good performance its benefits – a winning combination. I hope you will consider trying the 6m band and experience the pleasure I have experienced. I hope to see you down the log.

*Tom Hardy, VE4AKI, lives in Winnipeg and is a retired vocational teacher who has been a licensed Amateur for 30 years. He holds an Advanced class licence and is active on all the HF bands as well as 6 metres. He has been involved in QRP activity for over 20 years, both CW as well as SSB. "I enjoy designing and building all kinds of ham equipment especially antennas. I live on a small city lot and am currently concentrating on limited space antennas."*



**The complete shack with the 6m station on the left, QRO station in the centre and the QRP station on the right. (Note: see page 14 for more information on "Six Metres and Down".**

# POWERPOLE DISTRIBUTION BLOCK

**Don Dorward, VA3DDN**

I use the Anderson Powerpole connectors almost exclusively in my shack (and in my car!) to connect all my 12-volt equipment, including LED lighting as well as radios.

My home system started with an MFJ-1118 switched outlet power bar with eight pairs of binding post terminals and which includes fusing.

In hindsight, I should have gone with the all Powerpole version (MFJ-1129) as I ended up putting Powerpole "pigtails" on most of the binding posts anyway.

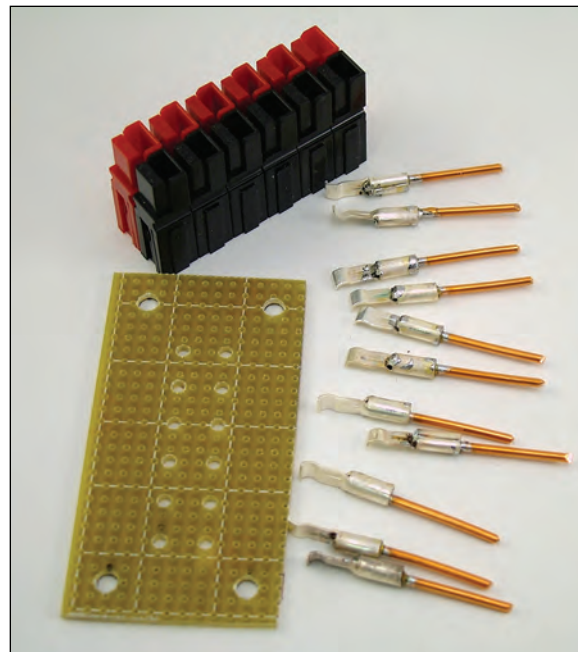
The 12-volt DC for the system is provided by a solar charged battery bank or it can be switched to an Alinco 30-amp DC power supply if needed.

It seems like I always need yet another Powerpole DC outlet to connect a panel lamp, a scanner or something else.

I thought about purchasing a Power Pole distribution block – which is available from PowerWerx and other suppliers – but it seemed like a good opportunity for a simple homebrew project that can be done in an afternoon or so.



**Figure 1: The completed Powerpole block**



**Figure 2: The assembly components**

One of the nice things about Powerpoles is that the plastic shells can lock together on any of the four sides, which really simplifies the assembly.

Figure 1 shows my completed Powerpole block, with six pairs of connectors.

The Table at the bottom left lists all of the basic parts you will need to make a six-outlet distribution block. You can easily increase or decrease the number of contact pairs to suit your own needs.

This is such a simple project that no schematic or mechanical drawing is really necessary.

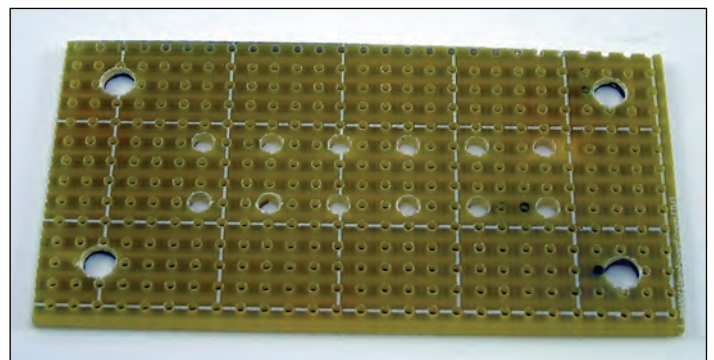
I found that if you assemble the Powerpole block as shown, the printed circuit board (PCB) connection footprint needed is basically 0.3 inches x 0.3 inches, as you can see in Figures 2 and 3.

The assembly steps are:

- 1) Assemble the Powerpole shells into a rectangular block as shown in Figures 2 and 3, paying attention to polarity. The accepted convention is (viewing from the front or contact side) tongue down, hood up, Red on the left, Black on the right. (Red positive, Black negative)
- 2) Cut one-inch long bare copper wires #12 or #14 and solder into the 12 Powerpole contacts. Keep solder and/or flux from flowing onto the contact mating surfaces.
- 3) Insert the Powerpole contacts into each connector shell using needle-nose pliers, ensuring that each snaps in place (see Figure 4 on the next page).

- 4) Cut the stripboard to size and drill 7/64-inch clearance holes for the copper wires on a 0.3-inch x 0.3-inch grid.

If mounting in a box, also drill four 1/8-inch corner holes for mounting screws.



**Figure 3: The printed circuit board**

## PARTS LIST

Quantity	Description
6	Red Powerpole shells
6	Black Powerpole shells
12	30-amp Powerpole contacts
12	Bare copper wire, #12 or #14, 1" long
1	.062" stripboard, 1.5" x 2.75", 0.1" grid
1	Suitable plastic enclosure with lid (* optional)
4	6/32" x 1/2" machine screws*, washers and nuts
4	3/8" spacers*

**\*Note:** for use if mounting in an enclosure or a project box



## SPECIAL EVENT STATION VE100VIMY VIMY RIDGE, FRANCE

The Battle of Vimy Ridge in April 1917, the first significant Allied victory of the First World War, was accomplished by the Canadian Divisions fighting as a single unit. This event is viewed by many as a nation-defining point in Canada's history. The Centenary will be commemorated by a Special Event Station, VE100VIMY, operating from the Canadian National Historic site on Vimy Ridge, France in April of 2017.

The organizer is the Vimy Commemorative Station Society, registered in British Columbia. The Society invites Canadian Amateurs who are experienced HF operators to apply to be part of the operating team. Full details will appear in the January/February 2016 TCA. Contact [ve100vimy@rac.ca](mailto:ve100vimy@rac.ca) for more information.

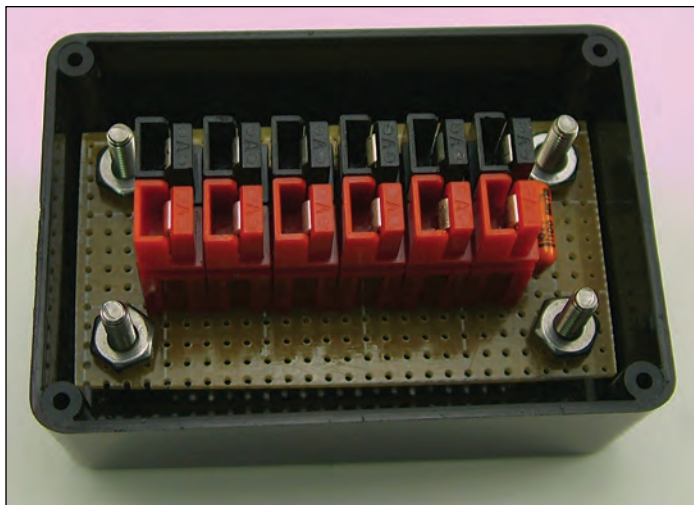


Figure 4: Insert the Powerpole contacts into each connector shell

5) Insert the two rows of copper contact wires into the drilled holes. You may want to tack some of them to the copper strips on the stripboard to keep the block of contacts snug to the printed circuitry board.

6) Cut two lengths of the #12 or #14 bare copper wire to act as busbars; one for positive and one for negative.

7) Bend the projecting contact copper wires over each respective

buss wire and clip off unnecessary lengths. Solder securely ensuring good wetting. I used a 40-watt controlled temperature soldering iron with a 3/16-inch tip and rosin-core wire solder (see Figure 5).

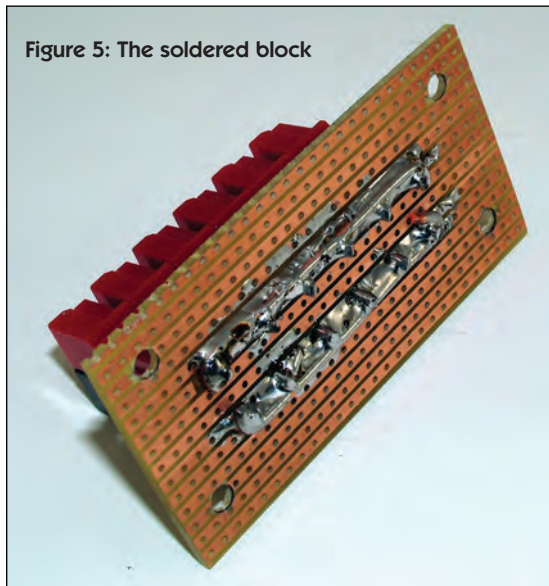


Figure 5: The soldered block

### Notes:

1) A kit of Powerpoles (with 20 connector shells and 30-amp contacts) is available from Amateur Radio dealers. For example, Durham Radio stocks it as P/N: AND-13PACK20.

2) Epoxy Stripboard with 0.1-inch pitch holes are available from Veroboard in Vancouver at <http://www.veroboard.com>.

*Don Dorward, VA3DDN, has developed programs for accelerated life testing methods such as HALT and HASS, in-house training for Quality Systems, ESD prevention, IPC Workmanship Standards for the Acceptability of electronic equipment. He holds Basic and Advanced certification and is a Life Member of the Institute of Electrical and Electronics Engineers and is a member of the American Radio Relay League, Radio Amateurs of Canada and Ten-Ten International.*



## POTENTIAL PROBLEMS WITH COAX

Guy Olinger, K2AV

Here is a small, non-inclusive list of things that can go wrong with a coax run to the house. I have personally seen all of them at some time or place – some big names, too.

1) At either or both ends, the shield was not soldered to the PL-259 shell and the connection has dwindled to a small percentage of the shield due to the gradual destruction of the fine wire touching points.

1a) Ditto for the centre conductor to the hollow centre conductor pin of the PL-259. It's amazing how many PL-259's are not soldered in a hurry to "hear how it works". I've done it myself and forgotten I didn't. For years.

2) The "Balun" is cheap junk; or burned up/melted/shorted turns/cracked/destroyed core, now junk.

3) The coax on the tower is not of high quality and does not have its weight supported. The stretch has changed the separation of shield and centre conductor, and the characteristic impedance has shifted, introducing an unwanted transformation into the equation.

3a) The coax is very old, but still "looks OK" even though it isn't. Much coax material undergoes very slow (even decades long) chemical changes which can change characteristics. Wide frequency and TDR scans of coax into opens, shorts, checked 50-ohm and 200-ohm terminations are the only ways to check for "still-OK-ness".

4) Water has invaded the coax, from a nick, tear or critter bite in the jacket – or non/poorly sealed coax connector – and capillary action has wicked along its entire length. This can be hundreds of feet in the worst of cases. The loss-added coax does not necessarily stay at 50 ohms Z zero. I have seen coax shields turn green (copper oxide) for their entire length. Interestingly, the practical outcomes of this extra loss was initially most often blamed on the transceiver.

5) The coax has been wrapped around a pipe by rotator torque (see #3 above).

6) The coax has had something heavy dropped on it (see #3 above).

7) The coax shield was the only ground path for induced current for a close lightning strike. (Usually a direct strike smokes coax beyond any confusion.)

8) The PL-259 shell was not pliers-tightened and has worked loose, gradually producing burned points of connection.

9) A long coax run was laid tight in summer heat and stretched in the winter (see #3 above).



# RANDOM THOUGHTS...



Dirk Moraal, VY1NM  
Box 75  
Tagish, YT Y0B 1T0

**William of Occam,** or Ockham, likely could have imagined the impact radio would have on the world, and surely he would have foreseen the value of Amateur Radio.

William of Occam was born in, well, Ockham, Surrey, England in 1285 and managed to live until 1349.

He was a philosopher and a theologian. He studied at Oxford.

His forward thinking created controversy, but his thought gave impetus to the development of experimental sciences amongst other things and, it being the Middle Ages, this got him into trouble.

He is probably most well known for the posit we call Occam's Razor, which holds that entities should not be multiplied unnecessarily.

In other words, the simplest of competing theories should be preferred to the complex, and that the unexplained should be looked at first in terms of known quantities.

## The case of the reluctant Yagi... or, Occam was right!

In everyday language this is the KISS principle we all know and love but ignore on a daily basis. Well, I mean I do. Keep It Simple. Start from the known and go towards the unknown. Sorry about the philosophical introduction, but it has some small relevance in solving the "Riddle of the Reluctant Yagi".

Some months, or was it years, ago, I bought a four-band, four-element bundle of grief of famous parentage but now of much diminished character. I decided, in an instance of hubris, that I could improve the product rather than have to repackage it and send it off at great expense and botheration.

One day, I finally finished assembling the antenna, after manufacturing missing parts, and rebuilding weak components, and finally there it was, just as winter set in, and I thought this was my chance to test the theory that antennas work best if erected during a snow storm at 40° below zero.

I waited as snow piled up in downy drifts and covered all the mislaid items, and all seemed well. No doubt under the snow the weasels were doing what weasels do to mice. At least I hoped so.

It was also turning into a good year for moose, which gave me a some concern, because years ago I had left a very large plate glass window in the field, destined to be the showpiece of my soon to be built dream office /ham shack / man cave, self-designed so I could have a comfortable view of any wildlife cavorting on my meadow, while I enjoyed good ragchews with some exotic entity or another, only to have a rather large bull moose walk directly over the snow-covered window and dash my plans. Fortunately, the animal was not injured.

There are times when operating mobile or portable would have seemed to be the more sensible path and this seemed like one of them. But where I live, moose might take a notion to flatten a mobile or portable operator. In fact I know they do.

This particular year the moose had built what looked like a multi-lane freeway across my meadow, and evidence of nightly traverses could be seen by the morning twilight.

As the snow becomes packed and difficult to walk on, the moose will move over into the soft stuff. Moose may look stupid but they are not. So the antenna in the snow bank became a concern, as the animals were coming closer and closer to the cabin.

When one passed between the greenhouse and the antenna, I had visions of a twisted pile of expensive aluminium tubing growing out of the snow come spring. So I got busy hoisting the Yagi off the ground.

The job was easy and I asked myself why I had not done it sooner. But I already knew the answer. Don't do today what you can leave for the future, the mantra of the procrastinators. It works on the following principle. If you get right on the job, unprepared, you are bound to make mistakes that will cost time and effort. But if you procrastinate, there will arrive a moment when everything is just right, and the project will be completed quickly and easily.

And so it was. In short order the chain hoists lowered the retractable tower to just the right height for me to loft the beam, and after some judicious wrench work, they raised it again and that was that... just over an hour's work. I could have done it on snowshoes. I congratulated myself. And that dear reader explains the true value of procrastination.

With the antenna safe from imaginary herds of stampeding moose, I set out to grab some choice DX. But nothing happened. Out I went to check the coax. Then I dropped the tower to check all the nuts and bolts, and then I raised it again. Then I decided to check the balun. Down the mast came and up it went again. Then the traps got looked at. Connectors, moisture, coax length and ground, were all considered. Coax switches and sundry were next. I had tools all over the place – some of which would not be seen till the snow melted the following June. This was turning into a job for Hercule Poirot.

After I checked everything again and had the mast back up, I set about looking for possible causes in the literature. What confounded me was that the antenna analyzer said the antenna was fine. At the same time I was wondering why the antenna tuner was behaving erratically.

One evening before my quiet time, I was organizing some thoughts and I happened to remember a cheaply made antenna tuner bought from a popular manufacturer.

It had arrived with the roller inductor falling to pieces.

It was obviously a returned item the retailer had shipped on to me as I was far away and less likely to return it.

Evidently, the "good enough for the bush" line of thought was alive and well.



On the contrary, in the bush one needs the best and most reliable gear. Eventually, they replaced the tuner.

Suspicion raised its ugly head and I fired up the station. Sure enough, the same part, the roller inductor, was making intermittent contact as the dial turned. The problems seemed to vanish when I put side pressure on the knob.

I finally went on the microwaves and had a chat with my patient friend Bill, VE4KZ, and after trying a few things, we decided that the real culprit lay elsewhere.

I learned a few things from all this. To trust my instincts when mixing antennas with moose, and to buy only the best quality items rather than the cheaper (but not in the long run) ones, or do without. And I had fallen into the trap of multiplying imagined problems with the antenna and ATU, while the real goblin was propagation.

So now I understand what Occam meant.

*Is a radio-collared moose a mobile station?*

## ESTATE CLEAROUTS

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## Feedback: Readers write to TCA



### THE MYSTERY OF THE CW MODE

I have always been fascinated with the CW mode. I was exposed to ham radio in my youth by my brother, now a Silent Key, but did not become a ham until later in life. Watching and listening to him making CW contacts with a basic receiver/transmitter and a vibroplex "bug" was like watching a magician in action.

Eventually, as an adult, this magic took hold and with the encouragement of a ham friend I decided to get my "ticket". Although learning the code was not difficult, taking the test was another matter. Nervousness robbed me of success a couple of times but eventually I was successful.

For the first few years, 1984 to 1987, I operated CW on all bands with a few 10m phone contacts thrown in. In 1987, I received my Advanced licence. The next few years, until 1993, I operated a mixture of phone and CW. I also dabbled with 6m, RTTY and satellites. In 1993, the QRP bug bit and since then I have operated primarily using CW and recently phone modes. So after a few thousand CW contacts I have made a few observations.

As I write this letter I am monitoring 14.060 and hear a number of stations that are audible just above the noise level. Although weak, they are copyable. Stations this weak on phone would be impossible to work. Weak signal work is much easier on CW. The variety of equipment used by CW ops seems much more varied than phone ops. I've worked stations using separate receiver/transmitters, older tube rigs, kit-built transceivers and even complete homebrew stations. Antenna experimenters, like myself, are also common with CW ops. Collecting and using telegraph keys is also a popular activity with CW ops.

So where is the mystery I refer to in the title? In phone operation when you answer a CQ or receive an answer to your own, the voice at the other end provides a few clues as to who they are. Not so with CW. Until you make contact they are the mystery. Are they male or female, old or young, perhaps handicapped? Are they operating the latest wiz-bang radio or a homebrew rig they constructed themselves? The fact that the dits and dahs they initially sent give few clues has always roused my curiosity as to who might they be. This mystery factor has always drawn me back to CW operation even after time spent with other modes.

There is no ultimate solution to this mystery. Each contact is a mystery in itself and by making the contact you unravel only a small part but never the whole. That is the enduring mystery and attraction of the CW mode.

73, Tom Hardy, VE4AKI – Winnipeg, Manitoba



### THE DEFENCE OF AMATEUR RADIO FUND

The Defence of Amateur Radio Fund (DARF) is a Trust Fund that was established in the early 1990s by the Canadian Radio Relay League to provide financial support for research, and to defray travel expenses of a delegate to World Radio Conferences to defend the Amateur Radio bands.



It costs a lot to attend a WRC meeting such as the upcoming WRC-15 meeting this November (see page 24). Travel and meeting expenses for a three- to four-week conference can top \$10,000 or more in an international city like Geneva, Switzerland even for the most frugal.

Without new donations, DARF funds on hand won't last indefinitely. Donations may be made by cheque only. Cheques should be made out to "Radio Amateurs of Canada" but should also include a memo indicating that the donation is for DARF. Cheques may be sent by mail to Radio Amateurs of Canada, 720 Belfast Road, Suite 217, Ottawa K1G 0Z5. For more information please visit [darf.rac.ca](http://darf.rac.ca).

# RAC CANADA WINTER CONTEST 2015 / CONCOURS D'HIVER DU CANADA RAC 2015

In December each year, Radio Amateurs of Canada (RAC) sponsors the Canada Winter Contest. Amateurs all over the world are invited to participate.

**Contest Period: 0000 UTC to 2359 UTC December 19, 2015.**

Next year the contest will be held on December 17, 2016.

**Bands and Modes:** 160, 80, 40, 20, 15, 10, 6 and 2 metres, CW and phone (SSB, FM, AM, etc.)

**Suggested frequencies:** CW – 25 kHz up from the band edge and for SSB – 1850, 3775, 7075, 7225, 14175, 21250, 28500 kHz. Check for CW activity on the half-hour.

**Exchange:** Stations in Canada send RS(T) and province or territory. VEØs and stations outside Canada send RS(T) and a serial number.

**QSOs:** Contacts with stations in Canada or VEØs are worth 10 points. Contacts with stations outside Canada are worth 2 points. Contacts with RAC official stations are worth 20 points. RAC official stations are: VA2RAC, VA3RAC, VE1RAC, VE4RAC, VE5RAC, VE6RAC, VE7RAC, VE8RAC, VE9RAC, VO1RAC, VO2RAC, VY0RAC, VY1RAC and VY2RAC. You may work any station once on each of the two modes, on each of the eight contest bands.

It is **prohibited** to make CW contacts in the conventional phone sub-bands and phone contacts in the conventional CW sub-bands. Contacts or soliciting QSOs through a repeater during the contest period is not allowed.

**Multipliers:** Thirteen in total, Canada's 10 provinces and three territories. Each multiplier may be counted once on each mode on each of the eight contest bands. The multipliers, with their postal abbreviations and prefixes are: Nova Scotia [NS] (VE1, VA1, CY9, CYØ); Quebec [QC] (VE2, VA2); Ontario [ON] (VE3, VA3); Manitoba [MB] (VE4, VA4); Saskatchewan [SK] (VE5, VA5); Alberta [AB] (VE6, VA6); British Columbia [BC] (VE7, VA7); Northwest Territories [NT] (VE8); New Brunswick [NB] (VE9); Newfoundland and Labrador [NL] (VO1, VO2); Nunavut [NU] (VYØ); Yukon [YT] (VY1); and Prince Edward Island [PE] (VY2). Certain special Canadian prefixes in use at the time of the contest may also apply; however there may be no more than 13 multipliers on each band/mode. Please use the multiplier abbreviations, in square brackets, noted above.

**Final Score:** The total QSO from all bands multiplied by the total number of multipliers from all bands.

**Categories:** The following 9 categories are eligible for plaque's or certificates as detailed in the Awards section of the rules.

- Single Operator All Bands High Power (>100 Watts) – **Radioworld**
- Single Operator All Bands Low Power (max. 100 Watts output) – **Contest Club Ontario**
- Single Operator QRP (max. 5 Watt output) All Bands & Single Band \*\* – **QRP Canada**
- Single Operator All Bands CW only, any authorized power – **Maritime Contest Club**
- Single Operator All Bands PH only, any authorized power – **Saskatchewan Contest Club**
- Single Operator Single Band, any authorized power \*\*\* – **Radioworld**
- Multi-Operator Single Transmitter High Power (>100 Watts) \* – **Alfa Radio**
- Multi-Operator Single Transmitter Low Power (max. 100 Watts output) \* – **Tony Allsop VE3FTA Memorial by the Mississauga ARC**
- Multi-Operator Multi-Transmitter, any authorized power – **Radioworld**

For the Canada Winter Contest a special trophy is awarded for the highest Single Operator (no power classification) Foreign Entrant – **Russ Coleston VK4XA Memorial by Alan Goodacre, VE3HX.**

Special thanks to our sponsors for their support of the RAC contests.

En décembre de chaque année, Radio Amateurs du Canada parraine le concours d'hiver du Canada. Les amateurs du monde entier sont invités à y participer.

**Durée du concours: 0000 UTC à 2359 UTC le 19 décembre 2015.**

L'année prochaine, le concours aura lieu le 17 décembre 2016.

**Bandes et modes d'émission:** 160, 80, 40, 20, 15, 10, 6 et 2 mètres, en CW et/ou en phonie (BLU, FM, AM, etc.).

**Fréquences suggérées:** CW – 25 kHz au dessus de la limite inférieure de la bande. BLU – 1850, 3775, 7075, 7225, 14175, 21250 et 28500 kHz. Vérifiez aux demi-heures pour l'activité en CW.

**Échange:** Les stations au Canada envoient un rapport RS(T) ainsi que leur province ou territoire. Les stations VEØ et les stations à l'extérieur du Canada envoient un rapport RS(T) ainsi qu'un numéro séquentiel.

**Les QSO:** Les contacts avec des stations au Canada ou des stations VEØ valent 10 points. Les contacts avec des stations à l'extérieur du Canada valent 2 points. Les contacts avec des stations officielles de RAC valent 20 points. Les stations officielles de RAC sont: VA2RAC, VA3RAC, VE1RAC, VE4RAC, VE5RAC, VE6RAC, VE7RAC, VE8RAC, VE9RAC, VO1RAC, VO2RAC, VY0RAC, VY1RAC et VY2RAC. Vous pouvez contacter une station une fois dans chacun des modes, sur chacune des huit bandes du concours.

Il est **défendu** de faire des contacts en CW sur les parties des bandes normalement réservées à la phonie, et vice versa. Il est aussi défendu de faire ou de solliciter des contacts via un répéteur pendant le concours.

**Multiplicateurs:** Treize au total, les 10 provinces canadiennes et les 3 territoires. Chaque multiplicateur peut-être compté une fois pour chaque mode sur chacune des huit bandes du concours. Les multiplicateurs, avec leur abbréviation postale et leur(s) préfixe(s), sont: Nouvelle-Écosse [NS] (VE1, VA1, CY9, CYØ); Québec [QC] (VE2, VA2); Ontario [ON] (VE3, VA3); Manitoba [MB] (VE4, VA4); Saskatchewan [SK] (VE5, VA5); Alberta [AB] (VE6, VA6); Colombie-Britannique [BC] (VE7, VA7); Territoires du Nord-Ouest [NT] (VE8); Nouveau-Brunswick [NB] (VE9); Terre-Neuve et Labrador [NL] (VO1, VO2); Nunavut [NU] (VYØ); Yukon [YT] (VY1); Ile-du-Prince-Edouard [PE] (VY2). Certains préfixes canadiens spéciaux en usage pendant le concours peuvent aussi s'appliquer; cependant, il ne peut y avoir plus de 13 multiplicateurs pour chaque bande/mode. Veuillez s'il-vous-plaît utiliser l'abréviation du multiplicateur, entre crochets, telle que notée ci-haut.

**Pointage final:** Le total des des QSO obtenus sur toutes les bandes, multiplié par le nombre total de multiplicateurs obtenus sur toutes les bandes.

**Catégories:** Les neuf catégories suivantes sont éligibles pour des plaques ou des certificats, tel que détaillé dans la section Prix des règlements du concours.

- Opérateur unique, toutes bandes, haute puissance (>100 Watts) – **Radioworld**
- Opérateur unique, toutes bandes, basse puissance (max. 100 Watts à la sortie) – **Contest Club Ontario**
- Opérateur unique QRP (max. 5 Watts à la sortie), toutes bandes et bande unique \*\* – **QRP Canada**
- Opérateur unique, toutes bandes, CW seulement, toute puissance autorisée – **Maritime Contest Club**
- Opérateur unique, toutes bandes, phonie seulement, toute puissance autorisée – **Saskatchewan Contest Club**
- Opérateur unique, bande unique, toute puissance autorisée \*\*\* – **Radioworld**
- Opérateurs multiples, émetteur unique, haute puissance (>100 Watts) \* – **Alfa Radio**
- Opérateurs multiples, émetteur unique, basse puissance (max. 100 Watts à la sortie) – **Trophée mémorial Tony Allsop VE3FTA par le CRA Mississauga**
- Opérateurs multiples, émetteurs multiples, toute puissance autorisée – **Radioworld**



### Category notes:

1) The contents of a log that is submitted for a specific category must reflect that category. In the event of a conflict between the actual content of the log and the stated category in the Cabrillo header or contained in other elements of the entry material, the actual contents of the log will be used to determine the category of entry where possible. In the event this cannot be determined or in the event where a log does not identify the entry category, the entry will be classified into the Multi-Operator, Multi-Transmitter, any authorized power category.

Any entrant who wants to enter a specific category (i.e. Single band entry) but who also worked additional contacts outside that category **may** submit those additional contacts in a **separate** check log file. Do not include them in the main entered category log file.

2) Where the categories have a power class and the submitted log does not clearly identify the power class entered, then the log will be treated as if the highest power class for that category was entered.

3) Single operators who receive assistance from a DX spotting system, including Skimmer and similar technologies or any type of Packet Cluster network during the contest must classify themselves as Multi-ops.

4) \* In the Multi-Single category only one transmitter and one band are permitted during the same time period (defined as 10 minutes). Exception: One, and only one, other band may be used during any 10-minute period, if and only if the station worked is a new multiplier. In other words the Multi-Single Transmitter class allows a second station to "hunt" and work multipliers only on a single separate band during any 10-minute period.

5) Multi-Multi category stations may operate on several bands simultaneously.

6) \*\* Although there is only one QRP category, which qualifies for a plaque or certificate, it is intended that the published results would show All Bands or the Single Band of operation. To facilitate this break out of the listings, your entry should indicate the band(s) or mode(s) operated.

7) \*\*\* Although there is only one Single Operator Single Band category that qualifies for a certificate or award, it is intended that the published results would show High Power or Low Power. To facilitate this break out of the listings, your entry should indicate the power class you used.

8) Operators who have participated in any multi-operator category entries may not contact the station they have participated in if they were to operate as part of another entry in the same contest. In addition, guest operators at any station regardless of entry category may not claim contacts with the station host owner or host station mobile call for points or multipliers.

**Awards:** Plaques will be awarded to the top-scoring entrants in each category, as noted above in the category list. Special thanks to our sponsors for their ongoing support!

Certificates will be awarded to the top-scoring entrant in each category in each of:

- Canadian provinces or territories
- Continental US call districts, W0 through W9 as well as Alaska and Hawaii. US Commonwealths, Territories and Possessions such as Puerto Rico, US Virgin Islands, etc will be treated as equivalent to a DXCC country
- DXCC country, excluding Canada and the US.

To facilitate the proper allocation of certificates, all US stations should indicate their actual US call district based on their actual address, as provided in the Cabrillo header, if different than indicated by their call prefix. DX stations should indicate the actual country of operation if different than indicated by their call prefix by indicating the country as part of the portable call sign designator.

RAC stations will compete and be considered the same as any other entrant for eligibility to plaques and certificates.

**Results:** Will be published in *The Canadian Amateur* magazine published by the Radio Amateurs of Canada. The results will also be published on the RAC website at <http://wp.rac.ca/contesting-results/> in the Contest section.

Pour le concours d'hiver du Canada, un trophée spécial est décerné au participant étranger (opérateur unique, sans classe de puissance) ayant obtenu le plus haut score – **le trophée mémorial Russ Coleston VK4XA par Alan Goodacre, VE3HX.**

Nous tenons à remercier nos commanditaires pour leur appui aux concours de RAC.

### Notes sur les catégories:

1) Le contenu d'un journal de bord soumis dans une catégorie spécifique doit refléter cette catégorie. Dans le cas d'un conflit entre le contenu réel d'un journal de bord et la catégorie inscrite dans l'entête Cabrillo ou contenue dans d'autres éléments de la soumission, le contenu réel du journal sera utilisé pour déterminer la catégorie de l'inscription. Dans le cas où celle-ci ne peut être déterminée, ou si le journal de bord n'identifie pas la catégorie de l'inscription, celle-ci sera classée dans la catégorie opérateurs multiples, émetteurs multiples, toute puissance autorisée.

Tout participant désirant s'inscrire dans une catégorie spécifique (par exemple bande unique), mais ayant aussi établi des contacts additionnels hors de cette catégorie **peut** soumettre ces contacts additionnels dans un journal de bord **séparé**. Ne les incluez pas dans le journal de la catégorie principale dans laquelle vous participez.

2) Dans le cas où les catégories ont des classes de puissance et que le journal soumis ne l'identifie pas clairement, celui-ci sera traité comme si la classe de puissance la plus élevée pour cette catégorie a été inscrite.

3) Des opérateurs uniques qui reçoivent de l'aide d'un système de repérage DX, comme Skimmer et des technologies similaires, ou n'importe quel type de réseau « Packet Cluster » pendant la période du concours, devront s'inscrire dans la catégorie opérateurs multiples.

4) \* Dans la catégorie opérateurs multiples, émetteur unique, un seul émetteur et une seule bande sont permis durant la même période de temps (définie comme étant 10 minutes). Une exception est cependant tolérée: une seule autre bande peut-être utilisée pendant cette période de 10 minutes, seulement si la station contactée est un nouveau multiplicateur. En d'autres mots, la classe opérateurs multiples, émetteur unique permet à une seconde station de « chasser » et contacter des multiplicateurs sur une seule autre bande dans une période de 10 minutes.

5) Les stations participant dans la catégorie opérateurs multiples, émetteurs multiples peuvent opérer sur plusieurs bandes en même temps.

6) \*\* Même s'il n'y a qu'une seule catégorie QRP qui soit éligible pour une plaque ou un certificat, il est prévu que les résultats publiés afficheront soit toutes bandes, soit la bande unique d'opération. Afin de faciliter la publication des résultats, votre entrée devrait indiquer le (les) bande(s) ou mode(s) opérés.

7) \*\*\* Même s'il n'y a qu'une seule catégorie opérateur unique, bande unique, qui soit éligible pour une plaque ou un certificat, il est prévu que les résultats publiés afficheront soit haute puissance, soit basse puissance. Afin de faciliter la publication des résultats, votre entrée devrait indiquer la classe de puissance utilisée.

8) Des opérateurs ayant participé à quelque entrée dans la catégorie opérateurs multiples ne peuvent pas contacter la station à laquelle ils ont participé s'ils devaient opérer en tant que membre d'une autre entrée lors du même concours. De plus, des opérateurs invités d'une station, peu importe la catégorie, ne peuvent pas revendiquer de contacts avec le propriétaire de la station hôte ou avec l'indicatif d'appel mobile de la station hôte pour des points ou des multiplicateurs.

**Prix:** Des plaques seront remises aux participants ayant obtenu le plus haut score dans chaque catégorie, telle que notée ci-haut dans la liste des catégories. Nous tenons à remercier nos commanditaires pour leur support continu! Des certificats seront remis aux participants ayant obtenu le plus haut score dans chaque catégorie se situant dans chacun(e) des:

- Provinces et territoires canadiens
- Districts d'appels des États-Unis continentaux, W0 à W9, et aussi pour l'Alaska et Hawaii. Les Commonwealths américains, territoires et possessions tels que Porto Rico, les îles Vierges américaines, etc, seront considérés comme étant équivalent à un pays DXCC; et
- Pays DXCC, excluant le Canada et les États-Unis.

**Entries:** All entries (electronic or paper logs) must be postmarked or electronically submitted by **January 31, 2016**. Electronic entries will be confirmed by return email. Send email entries to: **canadawinter@rac.ca**

Send paper entries to:

Radio Amateurs of Canada  
720 Belfast Road, Suite 217  
Ottawa, Ontario, Canada K1G 0Z5

We will be publishing a list of logs received and the categories entered on the RAC website during and/or after the submission period after the cut off date to assist in correcting any entry categorizations.

Paper mail entries must contain a summary sheet showing score calculation, a dupe sheet listing calls worked on each mode on each band, a multiplier check sheet and log sheets. Logsheets must show time, band, mode, call of station worked, exchanges sent and received and claimed for each QSO. New multipliers must be clearly marked in the log.

**Contest entry forms are also available on the RAC website at: <http://wp.rac.ca/contesting-results/>**

Any entry with 100 or more contacts should be submitted in digital format. The preferred electronic format is the RAC Cabrillo format. The files must be submitted in plain ASCII/Text format.

While the contest committee prefers Cabrillo formatted submissions, we will continue to accept electronic logs from older versions of contest software, but your file must be in ASCII/Text format and have all the required information. However ".adi" files are not acceptable.

Given there are several free programs that support the RAC contests and generate an acceptable Cabrillo entry, we encourage you to seek out one of these programs.

The RAC Cabrillo format is described and its detailed layout is shown on the RAC website at:

**<http://wp.rac.ca/contesting-results/>**

Electronic logs that do not have a complete Cabrillo header should provide a summary sheet with the same information as shown for the paper log entries. The standard summary sheet provided by the typical logging program is generally acceptable, but you should confirm that it contains the same information as shown for paper log entries.

A properly filled out Cabrillo header section will be a sufficient substitute for a summary sheet for logs submitted in that format. Please ensure that you review the header for accuracy and that it is completely fill out. Name your file with your Call Sign and the file extension. LOG (e.g., yourcall.LOG). If you email your log, please send the file(s) as **attachments**.

Do not paste the log file into the text of your message as there may be issues with the formatting making it difficult to properly extract the log. Large files may be zipped if necessary.

**If you need help with preparing or emailing your log or have any other questions, please contact Sam Ferris: [ve5sf@rac.ca](mailto:ve5sf@rac.ca)**

For the previous year's contest results, visit the RAC website (**<http://wp.rac.ca/contesting-results/>**) in the contesting section.

Afin de faciliter l'attribution des certificats, toutes les stations américaines participantes devraient indiquer leur réel district d'appel américain basé sur leur adresse réelle, telle que fournie dans l'entête Cabrillo, s'il diffère de celui indiqué par le préfixe de leur indicatif. Les stations DX devraient indiquer leur réel pays d'opération s'il diffère de celui indiqué par le préfixe de leur indicatif.

Les stations officielles RAC compétitionneront et seront considérées comme étant paires à tout autre participant en ce qui concerne l'éligibilité aux plaques et certificats.

**Résultats:** Ils seront publiés dans la revue *The Canadian Amateur*, publiée par Radio Amateurs du Canada. Il seront aussi publiés sur le site web de RAC au **<http://wp.rac.ca/contesting-results/>** dans la section "concours".

**Soumission des inscriptions:** Toute inscription (électronique ou papier) doit porter un cachet de la poste, ou être soumise par courriel, pour le **31 janvier 2016**. Les soumissions électroniques seront confirmées par courriel. Envoyez vos inscriptions par courriel à : **canadawinter@rac.ca**

Envoyez vos inscriptions papier à:

Radio Amateurs du Canada  
720 ch. Belfast, suite 217  
Ottawa, Ontario, Canada K1G 0Z5

Nous publierons une liste de journaux de bord reçus avec leur catégorie sur le site web de RAC pendant et/ou après la période de soumission et après la date limite afin d'aider à corriger toute erreur de catégorisation des inscriptions.

Les inscriptions papier envoyées par courrier doivent contenir une feuille sommaire démontrant le calcul des points, une feuille indiquant les indicatifs contactés dans chaque mode sur chacune des bandes (dupe sheet), une feuille indiquant les multiplicateurs utilisés et le journal de bord. Le journal doit montrer l'heure, la bande, le mode, l'indicatif de la station contactée, les rapports échangés et les revendiqués pour chaque QSO. Les nouveaux multiplicateurs doivent être clairement indiqués dans le journal.

**Des formulaires d'inscription sont aussi disponibles sur le site web de RAC au: <http://wp.rac.ca/contesting-results/>**

Toute inscription contenant plus de 100 contacts devrait être soumise sous forme numérique. Le format électronique préféré est le format Cabrillo RAC. Les fichiers doivent être soumis en format text/ASCII.

Bien que le comité du concours préfère les soumissions en format Cabrillo, nous continuerons à accepter vos journaux de bord électroniques générés par des versions antérieures de logiciels de concours, mais votre fichier doit être en format text/ASCII et contenir toutes les informations requises. Par contre, les fichiers ".adi" ne sont pas acceptables.

Comme il existe plusieurs logiciels gratuits supportant le concours RAC et pouvant générer un fichier Cabrillo acceptable, nous vous encourageons à en utiliser un.

Le format Cabrillo RAC est décrit et sa disposition est illustrée en détail sur le site web de RAC au : **<http://wp.rac.ca/contesting-results/>**

Les journaux de bord soumis sous forme numérique mais ne possédant pas d'entête Cabrillo complète devraient fournir une feuille sommaire avec les mêmes informations que pour les soumissions papier. La feuille sommaire standard fournie par les logiciels courants est généralement acceptable, mais vous devriez confirmer qu'elle contienne les mêmes informations que pour les soumissions papier.

Une entête Cabrillo correctement remplie se substituerait à une feuille sommaire pour les journaux soumis dans ce format. Veuillez s'il-vous-plaît vous assurer que vous vérifiez l'exactitude de l'entête et qu'elle soit complètement remplie. Nommez votre fichier avec votre indicatif et l'extension de fichier .LOG (par exemple votreindicatif.LOG). Si vous envoyez votre journal de bord par courriel, veuillez inclure le(s) fichier(s) **en pièce(s) jointe(s)**. Ne copiez pas le fichier dans le texte de votre message, étant donné qu'il pourrait y avoir des problèmes avec la mise en page, rendant la tâche d'extraire votre journal plus difficile. Les gros fichiers peuvent être compressés en format .ZIP si nécessaire.

**Si vous avez besoin d'aide avec la préparation ou l'envoi de votre journal par courriel ou avez d'autres questions, veuillez contacter Sam Ferris: [ve5sf@rac.ca](mailto:ve5sf@rac.ca)**

Pour les résultats des éditions précédentes du concours, visitez le site web de RAC (**<http://wp.rac.ca/contesting-results/>**), dans la section concours.



## ARES IN ACTION: OPERATION CROSSROAD

### A Regional Emergency Training Exercise

*Submitted by Larry Gorman, VE3LGN  
Certified Amateur Radio Emergency  
Coordinator for the Kitchener-Waterloo  
Amateur Radio Club*

The Region of Waterloo, in collaboration with the Township of North Dumfries and the City of Cambridge, ran the most ambitious emergency training exercise ever attempted in the Region, Operation Crossroad, on September 9. The Cambridge Fire Department managed a simulated rail crossing crash between a train and a dual bogey propane delivery truck. (Actual truck and actual fire response in an abandoned quarry, under rainy conditions). EMO, railway officials, and police were also on site to advise. The Emergency Operations Centre (EOC) and Evacuee Reception Centre were located at the North Dumfries Community Centre (NDCC) some kilometres away in Ayr. Police, Fire, and Municipal officials were active at the EOC. The Kitchener-Waterloo Amateur Radio Club ARES team was included as alternate communications.

Evacuees, each carrying a card identifying their particular simulated malady, were processed via a triage team as they arrived. They were then directed through half a dozen Regional social welfare agencies including Public Health, the Red Cross, Crisis Team, St. John Ambulance, the Community Care Access Centre and the Salvation Army.

One of our club members volunteered as an Evacuee. This enabled us to get input from that component of the exercise. More than 300 participants, mostly agency volunteers, were involved in this complex exercise, the majority being located at the combined Emergency Operations Centre / Evacuee processing site.

Our Team operated in the midst of all this activity at the evacuation centre set up at the NDCC. Our radio operators circulated among the Agencies and relayed messages.

All radio communications were funnelled through our Net Control station, located elsewhere in the Centre.

Our two-person team here carefully logged and efficiently redirected the messages. The Kitchener-Waterloo Amateur Radio Club was directly involved in the early planning of this exercise.

As the ARES representative on the Region's Social Services Emergency Planning Advisory Committee (SSEPAC), I was invited to be on the Reception Centre Design Team, as communications advisor. We also had representation on the operational Simulation Cell group. The task of this group was to keep everyone off balance by issuing unexpected emergency situations.

Operation Crossroad turned out to be a great opportunity for our ARES team to demonstrate emergency communications capabilities, as well as a great public relations exercise. Our services were in constant demand throughout this intense event.

Moreover, we were well received by members of the various social assistance agencies.

This was the largest exercise in which the Kitchener-Waterloo ARES has participated to date.

An initial concern, that took a great deal of time to sort out, was how Amateur Radio was going to seamlessly break into the reliance on cellphones ("BB's"; this is Blackberry country!) and runners. The idea of surprise communication interruptions was not an ideal way to win over acceptance of our services. The last minute solution was to approach each Agency individually, introduce ourselves, and suggest in a friendly manner how they might benefit by trying out our communications alternative. This approach worked extremely well.

At the post-exercise evaluation after the lunch, which was provided by the Salvation Army, all participating teams were asked to comment. Our primary concerns were the difficulty of communicating in the very noisy environment, and the lack of clear identification of the agency participants and their team leaders.

Large scale, multi-agency exercises could benefit from a centrally located whiteboard with participant names, team leaders and floor locations. An operation of this scale would benefit from having an accessible assistant Site Manager, located at a fixed location, to facilitate ongoing logistics. The facility manager was often busy and inaccessible.

Our team remained afterwards for a follow-up "how did we do" evaluation.

### RECOMMENDATIONS:

- We could have used more operators on the floor; at least one operator for each agency. Although we had eight radio operators, we were still short-handed.
- Earbud headphones are essential, with a collar clip mike.
- We need to investigate proper communications ID vests/jackets
- We, and all participants, would have benefited from an on-site map showing where each Agency was located.
- We need to ensure in future that we will have a suitable, isolated net control location.
- We should always make introductory contact with volunteer agency personnel well before an exercise gets underway.
- The team should include an off-site standby operator to handle any extramural phone patches.

The SSEPAC Design Team met a week later for the final evaluation. The coordinator concluded this meeting by stressing the importance of the communications component in an emergency event.

A big thanks to our team:

Ben, VE3ST, Rick, VA3ZUP,  
Peter, VA3PTB, Gord, VE3EOS,  
David, VA3PMT, Paul, VA3PDC,  
Ed, VE3TCK, Larry, VE3LGN and  
Frank, VA3FJM.

## "A Great Day For A Race"



Racers get ready for the swim portion of the triathlon.

**Submitted by Dale Neurauter, VE5DMN**

**August 9, 2015 – Waskesiu, Saskatchewan**

An early morning shower gave way to a beautiful day for the 34th annual Frank Dunn Triathlon (<http://frankdunntriathlon.ca/>).

With over 150 participants, organization was the key. Knowing which racers were inbound, and confirming that all were accounted for, has been the mission for club members since they took on the task so many years ago.



Barbara Slack presents the radio to Mike, VE5PT, while Dale, VE5DMN (left) and Peter, VE5VIS, look on.

Helping out with communications were members from both the Northern Saskatchewan Amateur Radio Club and the Lakeland Amateur Radio Association. Members included Art, VE5AAP, Mike, VE5PT, Blaine, VE5ZC, Peter, VE5VIS, Debbie, VE5DEB, Harry, VE5HFH, Jamie, VE5SAM, John, VE5JJA and Dale, VE5DMN.

This was our first year using laptops to present information quickly and more reliably. With most of the bugs worked out, the race organizers agreed that the trial was a success and would be used again next year.

We were honoured to have Barbara Slack, XYL of Harold, VE5BCS (SK), present the club with a 2m base radio. Harold had donated the radio and antenna to the club but had passed away before being able to present it himself. A big "Thank You" to Barb and Harold for your donation!

Next year marks the 35th year of the triathlon and our local hams will be out in force to assist again.

*All photos by John Alexandersen, VE5JJA.*



## SEARCH FOR A LOST QUADDER

**Submitted by John Gilje, VE6KJG**

On May 1, the Peace Country Amateur Radio Club's ARES Group was called out to assist Grande Prairie's Technical Search and Rescue (TSR) in the search for a lost quadder (four-wheeler).



On the Friday we dispatched our ARES truck. Not finding the missing man, the search



was expanded on Saturday. This required us to also dispatch our 26-foot ARES trailer to cover the larger area. On Saturday afternoon the man was found safe and healthy after 42 hours in the bush.

The PCARC members working the search were Lee, VE6XE, Rick, VE6CRE, Dennis, VE6ATC, Brian, VE6NOC, John, VE6KJG, John, VE6JWP, Ken, VE6KNH and Mike, VE6MJC.

Recognition by the Royal Canadian Mounted Police was greatly appreciated.

Our ARES group was formed in 2001 with the main purpose of assisting the local Search and Rescue group with missing persons and providing communication in the event of any disaster.

Our funding mainly comes from working casinos for the Alberta Gaming and Liquor Commission. With these funds we have been able to purchase a truck and trailer fully equipped with radio gear.

After running Amateur Radio certificate course for the TSR members, we were able to install APRS tracking units on their quads. This allowed us to keep a record of the quads travels when searching. We are using Pactor on HF for communications when we are out of range of the VHF and UHF repeaters. Training is done every second Monday. Anyone interested is quite welcome to join us.

Slave Lake fires, many weeks on a search in Hinton, and too many to report on in the Grande Prairie area are examples of the kind of calls we have been on.





# VC3DONATE: Special Event Station

## Earle Laycock, VE3XEL

Early in 2015, I received a notice from Canadian Blood Services (CBS) informing me that I was soon to make my 150th whole blood donation. Since this was a milestone donation, they asked if I wanted to do something special to mark the occasion.

My mind turned to 2002 when our Mississauga Amateur Radio Club (MARC) President Art Sinclair, VE3SQG, collapsed at home with a burst abdominal aneurysm. Art was rushed by ambulance to the Credit Valley Hospital with severe internal bleeding. Emergency staff quickly determined that this was a life and death situation and scheduled immediate surgery. To keep Art alive, 44 units of blood were transfused into his system while a surgeon was summoned from another hospital to head up the surgical team.

After a four and a half hour operation, Art's life was saved although another operation was performed two days later to address an infection. Art lay unconscious in bed for 16 days and stayed in the hospital for 26 days.

I suggested to Canadian Blood Services that perhaps we could run an Amateur Radio Special Event Station to recognize the importance of blood donations. This seemed especially appropriate since Art was a blood recipient and I was a donor and we both were Amateur Radio operators. In speaking with Art, I discovered that he was type O Rh positive (+) which is exactly my blood type. Since I had been a regular donor in Mississauga, Ontario, it might be possible that Art even received some of my blood.



Blood donor Earle Laycock, VE3XEL, operating VC3DONATE Special Event Station commemorating 150 whole blood donations.

The special events station idea was quickly endorsed by Canadian Blood Services. I contacted Jeff Stewart, VA3WXM, current President of MARC, and he said that MARC would help Art and me set up the station event. MARC was already scheduled to run a Special Event Station VE3MIS at the Streetsville Bread and Honey Festival from June 5 to 7 so I asked if we could piggy-back on that event. Daniel Goodier, VE3NI, was the event organizer and welcomed the idea.

Robert Emerson, VE3RHE, helped me apply for a special event call sign from Industry Canada. Our justification was to promote the voluntary blood donation program and to recognize how donations had saved the life of an Amateur Radio operator as well as my personal 150 donation milestone. Industry Canada was at first reluctant to recognize an individual situation but serendipitously, I discovered that 2015 was the 350th anniversary of the first successful experimental (dog to dog) blood transfusion in England. With that Industry Canada accepted my \$60 and issued a call sign to us: VC3DONATE. We were in business.

The Streetsville Bread and Honey Festival allocated space for our station on a small island in the Credit River. Daniel and his crew had already brought the club's emergency communications vehicle which held most of our equipment. There were plenty of trees to string up our wire dipole antenna which loaded up on 20m and 40m. Our transmitter was a Kenwood TS-450. We used N1MM to do the logging, running on an Asus Eee PC with Windows. Everything was powered by a large deep cell battery decommissioned from emergency hospital backup duty. We were able to run the station and logging computer for two days with the one battery.

VC3DONATE operated on two bands: 40m and 20m. Most of our contacts were made on 40m as this seemed to have the best propagation with least QRM. Unfortunately, the weekend coincided with the Museum Ships on the Air event which crowded the bands. We were able to contact many interesting marine



John Koren, VA3JK, operating the VC3DONATE Special Event Station at the Streetsville Bread and Honey Festival with Daniel Goodier, VE3NI, logging.

stations as part of this event including the Canadian *HMCS Haida*. We made over 70 contacts, mostly in Canada and the United States. We did make QSOs with stations in Lithuania and Poland. Our call sign confused some Amateurs as they were puzzled by our five-letter suffix "DONATE" even when spelled out phonetically (a challenge in itself!). After explaining the purpose of our special event, people understood the call sign but I would advise others considering a special call sign to keep it short.

Although we were in a more isolated area of the festival, we had many people come by and ask about our operation. We happily told them about Amateur Radio and our story of how blood donations had saved the life of a fellow Amateur Radio operator. Canadian Blood Services had a tent near us where the importance of donating blood was reinforced and appointments for donations could be made. Sadly, our star donor recipient Art Sinclair, VE3SQG, could not make the event due to a sudden health issue.

You can view a video about VC3DONATE, created by MARC member Eugene, VA3EUG, at [https://www.youtube.com/watch?v=\\_xWMnmHb7Xg](https://www.youtube.com/watch?v=_xWMnmHb7Xg)

I thank everyone for making VC3DONATE the success it was. I urge you to consider making a blood donation. You might be surprised that you can be a donor even if you are taking medication.

Contact Canadian Blood Services at 1-888-236-6283 or <https://www.blood.ca/> to find more information about donating. The life you save may be that of a fellow Amateur!

# IMPORTANCE OF SUPPORTING OUR PERSONAL AND COMMERCIAL VENDORS

**John Grow, VE2EQL**

Hamfests are a time to meet old and new friends, to help our fellow Amateur Radio operators clean up their basements and radio rooms, or to help a member get rid of all his excess radio equipment and so on. Then there are the bargains or deals of the century to locate.

More importantly, hamfests are the perfect places to see all of the interesting tables, to talk and meet with our friends and, hopefully, to buy something. The success of any hamfest is made up of three parts: 1) Amateur vendors; 2) Amateurs who want to participate and possibly purchase; and 3) commercial vendors.

Besides looking at all the tables, we Amateurs have a lot of projects on the drawing board, as a work in progress, or as the ideal project that we want to get started on. By taking a look at what the commercial vendors have to offer, you may find many items that you cannot live without. In addition, you will see their wares firsthand and, should you wish to make a purchase, you will be saving the shipping cost.

Please keep in mind that both commercial and Amateur vendors have taken the time and expense to travel, unload and set up their tables. They may have expenses such as employees, time, gas and lodging. They arrive early and sometimes have to set up their displays under less than ideal conditions. When the hamfest opens to the mass of people who have lined up, they try to get your attention so they can sell their wares to you. Their goal is to return home with less boxes and material than they arrived with and, of course, to cover expenses – hopefully with enough profit so they may return to your hamfest next year.

As members of an Amateur Radio club or Hamfest Committee, we should make every effort to thank the vendors who support us.

Below is a list of some items that I look for at hamfests that may help you with your new projects.

**New antenna wire:** I'm always experimenting with wire antennas so I'm always looking for rolls of antenna wire.

**Ladder Line:** at one time this was very popular and plentiful. Now, due to reduced demand, it is getting more expensive to manufacture and it is getting harder to find. Many antenna projects use ladder line and, by getting it at the hamfest, you will save the shipping costs. It's ready without waiting for the transport company to deliver it.

**Coax Connectors:** how many times have you needed one, but your only option was to go out to buy it and then you had to ask someone who didn't know what a PL-259 was. I try to keep a few on hand so if I mess one up I'll have one handy. The cost of a package of five or 10 is very small so if you had to travel 10 miles to the nearest store for only one connector, it would have paid for the 10 in the package at the hamfest. Plus your time, gas expense and wear and tear on the car.

**Coax Cables:** once again, you will save on shipping and be able to buy right away so you can start your projects. If you require a few hundred feet or a complete roll of 500 feet, it might be best to call the vendor at least one week before the hamfest to confirm the pricing and to see if he will have enough stock.

**Coax Adapters:** if you are using BNC, SMA, UHF or N, there is always somebody selling the adapters.

**Amateur Radio Books:** this is the perfect time to see firsthand what I'm buying, plus save the shipping fees and hassles.

Be sure to take a look at the commercial vendors websites; they have many products that can be used. Remember, if they are successful, they will have incentive to continue to support us at our hamfests.

## VE3WCD: CANAL DAYS SPECIAL EVENT

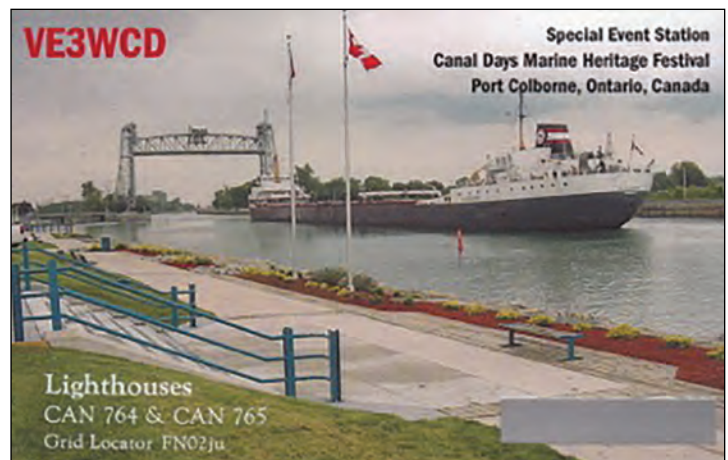
**Doug Frame, VE3JDF**

The Niagara Peninsula Amateur Radio Club (NPARC) once again participated in Port Colborne's annual Canal Days Marine Heritage Festival by running Special Event Station VE3WCD (Welland Canal Days) on the Civic Holiday weekend of August 1 and 2.

This Festival has been running for over 35 years and attracts large crowds from around Niagara as well as other parts of Ontario and New York State. There were many displays, both on the water and land, depicting the history and modern times of the Welland Canal. There were also concerts, food, a very large antique car show and lots of entertainment for both adults and children.

In addition to offering commemorative QSL cards to confirm QSOs, the station is close to two lighthouses at the Lake Erie entrance to the Welland Canal (CAN 764 & 765) and we were able to provide these lighthouse numbers for those Amateurs who are lighthouse number collectors.

In addition, one of the club's members David, VE3RNF, brought a collection of WWII military radio gear which attracted a lot of attention.



We set up two stations, feeding a multiband dipole and an R7 vertical. Unfortunately, band conditions were not great during the two days, however we managed to make about 60 QSOs, all SSB and mostly on 20 metres. We had fun as usual and were able to discuss our hobby with a number of people passing by.

Other participants were: Kevin, VA3KGS, Garth, VE3HO, John, VE3GBA, Roy, VA3NP, Dennis, VE3KVE, Oscar, VE3PIO, John, VA3XM and Doug, VE3JDF.



# BRITISH COLUMBIA'S SCOUT "PACIFIC JAMBOREE 2015"

*Ron Bilinsky, VA7RTB – Scouts Canada  
Camp Barnard Camp Committee*

As a 23-year member of Scouts Canada, and with three previous Scout Jamborees under my belt, I was looking for some sort of "Offer Of Service" (OOS) to volunteer for at for this year's BC Scout Pacific Jamboree (PJ15). It was titled the "Salish Sea Adventures" and was held from July 11 to 18 at Camp Barnard in my home town of Sooke, British Columbia, which is a 45 minute drive northwest of Victoria.

When I heard that there was to be an Amateur Radio Information Station at the Jamboree – and as a brand new Amateur (April 2015), Basic with Honours, through the Westcoast Amateur Radio Association – I jumped at the chance to help out.

I learned that Chris Carr, VE7BAC (2002) from Port Coquitlam, BC was running the station and that he was an experienced Amateur with his Advanced certification who had run Amateur Radio Information Stations at both Provincial and Canadian Jamborees in the past. He is also the Coordinator of Port Coquitlam's Emergency Preparedness Communications Group (EPCOM) and is the city's Emergency Coordinator. Also joining the team were two youth Scouters – Josh, VE7JRI and Brayden, a Venturer from Cold Lake Alberta – and several dedicated local Amateurs.

As a result, Chris brought the necessary equipment and technical knowledge to the event whereas I searched out numerous activities for the some 3,000 Scouts (youths aged 9 to 14 and their Leaders) to participate in. We set up a 3-element (10/15/20m) Yagi antenna on a 30-foot tower, plus a dipole and a Diamond X50 dual-band (2 metre and 70 centimetre) antenna and an Alpha Delta DX-DD (40/80m) wire. These were connected to two HF radios, (an Icom IC-7000 and a Yaesu FT-900), and a brand new Yaesu FT-8800R dual-band UHF/VHF radio purchased specifically for the event. Our home for the next seven days was a 17-foot X 16-foot military tent on loan from the Department of National Defence to the Jamboree. Our call sign for the Jamboree was VE7JAM.

I had the Scouts earn a Jamboree badge by participating in the following activities.

- deciphering a daily Morse code mystery message
- making a Morse code bracelet such as their name
- an Amateur Radio terminology word search
- deciphering two Morse code riddles (one on numbers and one on marine terminology)
- learning and reciting the phonetic alphabet



- going on a "fox hunt"
- sitting in on a 15-minute talk about how to earn your Amateur Radio Certificate
- talking with other Amateurs via Amateur Radio

We were not quite prepared for the enthusiasm of the Scouts who inundated our station and we ran out of badges on the first day. We were able to obtain more badges later on to award to all those who were keen on completing all of the tasks. Chris was also overwhelmed and he stated that we saw more Scouts on the first day of the Pacific Jamboree than they had visit their Station during the entire seven-day Canadian Jamboree – which had 7,000 Scouts in attendance; more than twice our numbers. Quite the feather in our cap!

In the end, we estimated that over 500 Scouts visited our tent and 125 Scouts completed all the activities – which took them some 2 1/2 to 3 hours). We also held a draw for a brand new Canadian Amateur Radio Exam Study Guide, which was won by a Leader who was keen on him and his troop earning their Amateur certification. Other Scouting activities during the Jamboree included scuba diving, mountain biking, canoeing & kayaking, overnight hiking, numerous arts



and crafts, rock climbing, several logging sports and, of course, the ever important badge trading.

To the Scouts amazement we were able to have them talk with other Amateurs in Russia, Chile, Hawaii, the Virgin Islands, Alaska, Manitoba, Ontario, California, New Mexico, Michigan, a hurricane chasing weather ship off the Baja Peninsula and even a fun contact in Disneyland.

Now that the Jamboree is over, and with the generous donation of some used equipment from Chris and other hams (a crank tower, coaxial cable, the 3-element Yagi and a folded dipole antenna, an older Yaesu FT-101E radio, an antenna rotator, several books plus our new Yaesu FT8800-R), we are now keen on developing a permanent Amateur Radio Shack at Camp Barnard. This station will serve as the Camp Ranger (VE7WRB) Willy Burrows' Ham Station, and be available for Scouts "Jamboree On The Air" (JOTA) held the third weekend of every October.

In addition as a five-year member of the Sooke Fire Department's Emergency Support Services (ESS), I see that it would provide an invaluable communication service for the community as we apply for an Emergency Service designation. This would allow Camp Barnard to be both a Reception Centre and a Group Lodging Centre for the Juan de Fuca Capital Region District, covering Sooke and the Western Communities, should we ever have to deal with any type of major disaster. We are also scheduled to hold the 2019 Pacific Jamboree at Camp Barnard again and hope to offer an even bigger and better event!

*Ron Bilinsky, VA7RTB, is 65 years old and is a retired social worker who volunteers in many local community programs including 23 years with Scouts Canada, five years with the Sooke Fire Department's Emergency Support Services and three years with the RCMP's Citizens Patrol & Speed Watch programs.*



**Bob Nash, VE3KZ**  
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**Milton, ON L9T 2Y1**  
**Tel. 905-878-7382**  
**Email: ve3kz@rac.ca**

## SPORTS PAGE INFO:

Tom Haavisto, VE3CX, assists with the preparation of the Sports Page. Thanks Tom!

For more contest information check out these sites:

<http://www.hornucopia.com/contestcal/weeklycont.html>

<http://www.contesting.com>

<http://www.sk3bg.se/contest/>

<http://www.arrrl.org/contests/calendar.html>

<http://www.arrrl.org/contests/rate-sheet/about.html>

<http://www.cq-amateur-radio.com/awards.html>

[http://www.arrrl.org/files/file/DXCC/2013%20DXCC%20Current\\_a.pdf](http://www.arrrl.org/files/file/DXCC/2013%20DXCC%20Current_a.pdf)

The "Contest Calendar" at the end of this column is presented as a guide only.

RAC and TCA do not necessarily endorse or support any of the contests or the accuracy of the information.

Bands: The 30, 17 and 12m bands are never used in any contest.

# THE SPORTS PAGE

## — THE CANADIAN CONTEST SCENE

### ARRL NOVEMBER SWEEPSTAKES

*For this issue of TCA, temporarily switching jobs with him, I have asked Tom, VE3CX, to provide his take on the ARRL November Sweepstakes. In 2014 he achieved second place on CW and third place SSB in the Canadian listings. He also provides the lion's share of ONN section QSOs!*

### A Report by Tom Haavisto, VE3CX

When it comes to the ARRL Sweepstakes, folks either love or hate this contest without much middle ground. The reason for this is that the exchange is on the long side. Participants need to exchange four pieces of information. This makes it more challenging than just sending RS(T) plus serial number, zone or province. The Sweepstakes is a very old contest with roots dating back to 1930, as well as formal traffic handling.

Each station can only be contacted **once!** – not once per band. This usually makes Sunday afternoon a bit of a drag as you try and find new stations to contact. There are 83 sections and the goal is to contact each section at least once – achieving a "clean sweep". For those skilled or lucky enough to contact all sections, you can request a Clean Sweep mug from the ARRL. As it turns out, a clean sweep will also net you "Worked All States" as a side benefit.

There are the usual categories: high power, low power, QRP, multi-op, etc. One additional category is S or School. The "check" is the last two digits of the year you were first licensed. You *must* send your call sign as part of the exchange. The exchange also includes a serial number, as well as your ARRL section. Even though the exchange sounds complicated, it is not overly difficult. In the phone sweeps for example, folks can be heard asking a few questions: "How much power are you running? What year were you licensed? What section are you in?" In this way, you can talk someone through the exchange. The complete rules can be found online at: <http://www.arrrl.org/sweepstakes>

As you may have guessed, some sections are more difficult to contact than others. You not only need to find a station in the section, but also find him/her on a band with suitable propagation. The good part is – between working "far away" stations on the high bands and close in stations on the low bands – a sweep is certainly do-able. Interestingly enough, a station with modest antennas – a tribander and inverted vee for 40 and 80 metres can actually do quite well in this contest!

If you get a chance, please give this contest a try. It is certainly a lot of fun and if you can spare a few hours – especially on Sunday – lots of folks will certainly appreciate a QSO!

One last item of note: if you live in Ontario please note that there are now four sections. If you are not sure which section you are in please check the map on the ARRL website. Even though it has been several years, some Ontario sections are a bit tough to find on the bands. Extra reinforcements are always welcome.

*Thanks Tom. For more information on the ARRL November Sweepstakes, please see page 29.*

### NEW CONTEST CLUB

New on the contesting scene, we wish to welcome Radiosport Manitoba! You can find them on the web at <http://rsmb.keizer.ca/> which describes them as "a local group of Amateur Radio operators interested in fostering growth and operation on the HF bands for contest operation and DX hunting." To help welcome them to the world stage, they had a visit from Glen Johnson, W0GJ, who was part of the very successful K1N DXpedition to Navassa.

### GREMLINS

A number of funny numbers appeared in the results of the WAE SSB and California QSO Party in the last issue. If you were one of the gremlin's victims, our apologies and please check the revisions in this issue's Contest Results on page 59.

### THOSE OTHER CONTESTS

I must comment on the 2014 results in the ARRL 10m contest. 174 Entries! Where did all that solar flux come from?

You will also notice that the "Preliminary" Results for the Stew Perry are in this issue. The finals were not available in time for publication. Better some info rather than none.

Note that this SPTBC 2015 contest is distanced from our "must enter" RAC Winter Contest (see page 46). Easier to work both! Have fun in the other competitions of your choice this Autumn. Good luck to all!

73, Bob, VE3KZ





CQ WW DX CW											
Call	QSOs	Zones	Countries	Score	Category	Call	QSOs	Mult	Score	Section	Class
VC7M	9,376	180	591	17,091,528	MULTI-MULTI	VE9OA	391	65	165	232,990	SA LP ALL
VE3EJ	6,614	201	749	16,679,150	MULTI-ONE	VE1RGB	747	24	91	219,420	SO LP 40M
VE2IM (VE3DZ)	7,089	162	521	12,326,784	SO HP ALL	VA7CRZ	425	79	126	203,975	SA LP ALL
VY2TT (K6LA)	6,483	153	498	10,609,998	SO HP ALL	VE6UM	717	27	83	186,230	SA LP 10M
VA2WA	4,639	177	627	9,689,808	SA HP ALL	N2WQ/VE3	684	25	90	183,195	SO HP 80M
VE3JM	5,678	153	490	9,561,410	SO HP ALL	VE1DT	439	30	120	178,500	SA HP 10M
CG3AT (VE3AT)	5,427	157	513	9,231,260	SO HP ALL	VE7RK	284	74	165	175,904	SA HP ALL
VE3RZ	5,020	163	541	8,830,272	MULTI-TWO	VA3DX	308	55	145	164,400	SA HP ALL
VE7GL	4,313	187	594	8,437,924	MULTI-ONE	VE7DDG	299	85	155	155,280	SO LP ALL
VE3BZ	3,551	161	543	6,630,976	SA HP ALL	VA2EU	241	71	212	152,537	SO HP ALL
VE3YAA	4,076	146	484	6,575,310	MULTI-TWO	VE3JDF	223	71	168	136,230	SA LP ALL
VC3M	3,600	155	525	5,857,520	MULTI-ONE	VY2OX	364	27	104	133,751	SO QRP 10M
VE3OI	3,910	141	432	5,764,380	SO HP ALL	VE3JI	208	79	173	131,040	SA LP ALL
VE3UTT	2,663	165	562	5,173,332	SA HP ALL	VE7NX	330	69	104	121,965	SO LP ALL
VE9ML	2,717	154	544	4,945,330	MULTI-ONE LP	VE1RSM	417	23	89	116,368	SO LP 40M
VO2CQ (VO1MP)	2,862	136	437	3,832,797	SA HP ALL	VO1BQ	273	43	111	111,034	SO LP ALL
VE9AA	2,753	113	354	3,410,034	SO HP ALL	VE2GHI	326	52	107	106,530	SO LP ALL
VA3DF	1,826	153	507	3,200,340	MULTI-ONE LP	VE3ZI	561	18	70	105,864	SO HP 160M
VE2BWL	1,680	125	394	2,290,866	SA LP ALL	VE1JBC	392	23	78	105,646	SO HP 15M
VE5ZX	1,513	139	453	2,244,864	SA HP ALL	VE7XT	219	73	127	104,000	SA HP ALL
VE3KI	1,596	121	392	2,156,139	SA QRP ALL	ARRL SWEEPSTAKES CW					
VA7OM	1,651	132	353	2,054,945	SA HP ALL	Call	QSOs	Mult	Score	Section	Class
VA7ST	2,336	112	263	2,028,375	SO HP ALL	VE7SZ (KL7SB)	1,153	83	191,398	BC	HP
VA2AM	1,160	143	483	1,802,254	SA HP ALL	VE3CX	994	82	163,016	ONN	Unlimited
CF3CCO (VE3KZ)	1,422	121	346	1,755,453	SO HP ALL	VE4DR	947	82	155,308	MB	MOLP
VE6JY (VE5MX)	3,208	39	154	1,628,920	SA HP 20M	VE3MIS	868	83	144,088	GTA	MO
VE4EA	1,809	108	259	1,569,292	SO HP ALL	VE6EX	847	81	137,214	AB	QRP
VE7VR	1,999	95	238	1,503,828	SO HP ALL	VE3MM	804	80	128,640	ONS	HP
VE3VN	1,305	100	316	1,461,824	SO QRP ALL	VE4EA	775	81	125,550	MB	HP
VE3GFN	1,297	92	349	1,426,194	SA LP ALL	VA3DF	755	81	122,310	ONS	LP
VE7XF	894	152	421	1,389,525	SA HP ALL	VE5ZX	753	81	121,986	SK	LP
VE3JAQ	1,275	113	338	1,338,568	SA LP ALL	VE5SF	736	82	120,704	SK	LP
VE3TG	1,071	102	327	1,278,849	SO LP ALL	VA7ST	726	83	120,516	BC	LP
VA7KO	1,358	123	265	1,229,572	SO HP ALL	VE3MGY	633	82	103,812	ONS	UnlimitedLP
VE6WQ	2,343	39	152	1,153,449	SA HP 15M	VE3KI	601	82	98,564	ONE	QRP
VE6BBP	1,524	99	205	1,133,312	SO HP ALL	VE3TG	601	82	98,564	ONE	LP
VE7IO	1,322	108	263	1,128,582	SA HP ALL	VE5MX	596	82	97,744	SK	Unlimited
VE4VT	764	123	360	972,762	SA LP ALL	VE9AA	593	81	96,066	MAR	UnlimitedLP
VA1MM	1,281	73	235	950,180	SO LP ALL	VE7YU	582	82	95,448	BC	LP
VE3PN	991	98	289	945,441	SO HP ALL	VO1HP	599	79	94,642	NL	LP
VE4GV	894	117	309	877,134	SA LP ALL	VE3GFN	583	81	94,446	GTA	UnlimitedLP
VE3AAQ	2,223	36	119	864,280	SO HP 40M	VE2AWR	561	81	90,882	QC	LP
VE3KP	946	86	268	846,768	SO HP ALL	VA6AM	567	80	90,720	AB	UnlimitedLP
VE3FH	856	93	279	826,584	SO LP ALL	VE1RGB	552	80	88,320	MAR	LP
VE3VV	749	94	319	776,853	SA HP ALL	VE3VN	540	80	86,400	ONE	QRP
VA3ATT	903	80	238	726,630	SO LP ALL	VE3BR	533	80	85,280	GTA	LP
VE2FK	894	79	242	713,583	SA HP ALL	VE3SMA	513	80	82,080	GTA	LP
VE3TW	794	85	260	694,830	SO HP ALL	VE3IAE	510	79	80,580	ONE	LP
VB7C (VA7RR)	1,969	36	105	686,247	SO HP 20M	VE2EZD	473	81	76,626	QC	Unlimited
VE6RST	1,649	35	133	650,328	SA HP 10M	VE3RCN	447	80	71,520	ONS	LP
VE3YT	777	84	250	646,624	SA HP ALL	VE3ZI	412	79	65,096	ONN	HP
VE3XAT	574	100	318	644,138	SA LP ALL	VA1MM	343	78	53,508	MAR	LP
VE2AWR	861	63	224	639,149	SO LP ALL	VO1BQ	345	75	51,750	NL	UnlimitedLP
VE7CV	756	100	222	638,526	SO LP ALL	VE4YU	333	74	49,284	MB	LP
VE5UF	1,411	36	140	599,984	SA HP 10M	VE3TW	308	79	48,664	GTA	LP
VE7FO	880	110	187	587,466	MULTI-ONE	VE3XAT	282	82	46,248	ONE	UnlimitedLP
VE2FU	1,474	35	121	585,624	SA HP 15M	VE3RX	304	76	46,208	ONN	LP
VE3CFK	635	104	274	568,890	SA HP ALL	VE2FK	285	78	44,460	QC	Unlimited
VA2ES (VE2AXO)	692	85	246	552,439	SO LP ALL	VE3KQN	296	69	40,848	ONE	QRP
VA6AM	836	84	192	524,952	SA LP ALL	VE3XD	263	75	39,450	ONS	QRP
VE4YU	645	96	204	483,900	SO LP ALL	VE3UTT	270	72	38,880	ONE	HP
VA7MG	653	98	189	444,276	SO HP ALL	VA2ES (VE2AXO)	258	73	37,668	QC	UnlimitedLP
VE3OM	502	69	233	434,578	SO LP ALL	VY2SS	253	63	31,878	MAR	HP
VE1OP	1,015	33	129	419,742	SA HP 10M	VE1RSM	226	66	29,832	MAR	LP
VA3AR	732	75	169	418,704	SO HP ALL	VE5AAD	224	63	28,224	SK	LP
VE5SF	710	70	165	411,955	SA LP ALL	VE3EJ	195	66	25,740	ONS	HP
VE7SZ	745	84	131	348,945	SA HP ALL	VE2QV	202	60	24,240	QC	LP
VE2EBK	370	104	265	347,598	SA LP ALL	VE3HGX	163	63	20,538	GTA	LP
VE3WG	496	79	211	316,680	SA LP ALL	VE7JKZ	154	63	19,404	BC	LP
VY2SS	899	29	109	305,118	SO HP 15M	VE3NE	159	61	19,398	GTA	Unlimited
VA7DZ	616	84	144	295,944	MULTI-ONE LP	VE1DT	158	57	18,012	MAR	HP
VE7AX	501	84	155	283,454	SA HP ALL	VE1ZAC	132	65	17,160	MAR	HP
VE6UX	310	96	224	270,400	SA HP ALL	VE4VT (VE4EAR)	116	71	16,472	MB	UnlimitedLP
VE1ZAC	462	69	192	269,613	SO HP ALL	VA7XB	135	59	15,930	BC	UnlimitedLP
VE3RSA	427	61	175	267,860	SO QRP ALL	VE3ZY	124	58	14,384	ONE	LP
VE3HG	437	36	166	254,722	SO QRP ALL	VE3RIA	165	38	12,540	ONS	LP
VA3SB	519	51	155	254,616	SO QRP ALL	VA3RKM	107	57	12,198	ONE	QRP
VE3XD	500	47	146	248,005	SA LP ALL	VA3JLF	123	49	12,054	ONE	LP
VE2EZD	378	85	170	245,565	SA HP ALL	VA2SNL	112	53	11,872	QC	QRP
VE6LB	347	95	198	237,037	SA HP ALL	VY1EI	112	52	11,648	NT	QRP
						VE9BWK	109	53	11,554	MAR	QRP

VY2LI	106	53	11,236	MAR	LP	VE7URN	150	56	16,800	BC	UnlimitedLP
VE3EP	109	48	10,464	ONE	LP	VA3SRV	132	63	16,632	ONS	LP
VA3WR	88	47	8,272	ONS	QRP	VE3UTT	146	56	16,352	ONE	LP
VE8EV	98	42	8,232	NT	HP	VE7SQ	122	60	14,640	BC	HP
VE7IO	82	48	7,872	BC	MO	VE9UNB	125	58	14,500	MAR	School
VE3IGJ	74	43	6,364	ONE	QRP	VE3IQZ	116	61	14,152	ONE	LP
VE7IAD	63	35	4,410	BC	LP	VA6UK	112	62	13,888	AB	HP
VE7BGP	51	32	3,264	BC	LP	VE2PIJ	122	56	13,664	QC	LP
VE9OA	41	28	2,296	MAR	LP	VE2PDT	126	54	13,608	QC	LP
VE3DQN	29	23	1,334	ONE	QRP	VE5CON	112	60	13,440	SK	LP
VE3DTI (VA3PCJ)	27	24	1,296	ONE	QRP	VE3TG	100	66	13,200	ONE	LP
VE7AB	22	21	924	BC	LP	VE3SST	110	55	12,100	GTA	LP
VA3FN	21	17	714	ONS	LP	VE3HED	77	78	12,012	ONE	HP
VE2WU	21	15	630	QC	HP	VY2MP	111	54	11,988	MAR	LP
VA7JC	7	8	112	BC	LP	VE9ACL	102	57	11,628	MAR	UnlimitedLP

#### ARRL SWEEPSTAKES SSB

Call	QSOs	Mult	Score	Section	Class
VE6SV (VE4GV)	1,822	83	302,452	AB	Unlimited
VA7RR	1,601	83	265,766	BC	LP
VE3CX	1,490	83	247,340	ONN	Unlimited
VE4EA	1,395	83	231,570	MB	HP
VE4VT (VE4EAR)	1,387	83	230,242	MB	LP
VE7SZ	1,302	83	216,132	BC	HP
VE5SF	1,080	83	179,280	SK	LP
VE8EV	960	82	157,440	NT	Unlimited
VE3MGY	849	78	132,444	ONS	LP
VA3DF	775	79	122,450	ONS	LP
VA7JW	769	76	116,888	BC	HP
VE3WRL	717	81	116,154	ONE	LP
VE3TW	659	83	109,394	GTA	Unlimited
VA7ST	658	82	107,912	BC	LP
VA3ZV	625	82	102,500	ONS	MO
VE3YT	611	82	100,204	ONS	HP
VE3RX	626	80	100,160	ONN	LP
VE3RZ	595	83	98,770	GTA	Unlimited
VA3MW	573	83	95,118	ONE	HP
VE3KI	563	83	93,458	ONE	UnlimitedLP
VE6UM	585	78	91,260	AB	HP
VE3VSM	580	78	90,480	ONS	LP
VE3WG	541	83	89,806	GTA	LP
VE3SGB	526	83	87,316	ONS	MO
VE9OA	559	78	87,204	MAR	LP
VE9AA	494	83	82,004	MAR	UnlimitedLP
VE6BBP	498	81	80,676	AB	HP
VE6AO	515	77	79,310	AB	MO
VE2EBK	500	79	79,000	QC	LP
VA3RAC (VA3GUY)	492	74	72,816	ONE	LP
VY2LI	446	74	66,008	MAR	HP
VA7AM	407	81	65,934	BC	LP
VO1KVT	404	81	65,448	NL	Unlimited
VE5KS	381	80	60,960	SK	LP
VE3SD	383	79	60,514	ONE	LP
VE2TSM	364	78	56,784	QC	LP
VY1MAB	430	66	56,760	NT	HP
VA1CHP	394	72	56,736	MAR	UnlimitedLP
VE2BWL	345	78	53,820	QC	UnlimitedLP
VE4YU	330	79	52,140	MB	LP
VA3PC	312	83	51,792	ONS	Unlimited
VE7SAR	303	83	50,298	BC	MO
VE3EJ	296	82	48,544	ONS	HP
VE3UZ	292	83	48,472	ONS	MOLP
VE9ML	311	77	47,894	MAR	MOLP
VY1JA	324	70	45,360	NT	HP
VO1BQ	303	69	41,814	NL	Unlimited
VA2EN (VE2NGH)	246	83	40,836	QC	Unlimited
VA3XH	248	78	38,688	ONS	HP
VA3TIC	281	61	34,282	ONE	LP
VE5AAD	265	61	32,330	SK	LP
VE2AXO	211	70	29,540	QC	LP
VE6SPS	214	66	28,248	AB	UnlimitedLP
VE7TJF	182	77	28,028	BC	UnlimitedLP
VE3BR	180	73	26,280	GTA	LP
VA3WR	180	72	25,920	ONS	LP
VA7XB	194	66	25,608	BC	Unlimited
VA3JLF	163	65	21,190	ONE	UnlimitedLP
VE1SQ	147	71	20,874	MAR	LP
VE3LJQ	175	59	20,650	ONE	LP
VE3IAE	196	51	19,992	ONE	LP
VE8GER	168	57	19,152	NT	LP
VA3NW	156	61	19,032	ONE	LP

VE7URN	150	56	16,800	BC	UnlimitedLP
VA3SRV	132	63	16,632	ONS	LP
VE3UTT	146	56	16,352	ONE	LP
VE7SQ	122	60	14,640	BC	HP
VE9UNB	125	58	14,500	MAR	School
VE3IQZ	116	61	14,152	ONE	LP
VA6UK	112	62	13,888	AB	HP
VE2PIJ	122	56	13,664	QC	LP
VE2PDT	126	54	13,608	QC	LP
VE5CON	112	60	13,440	SK	LP
VE3TG	100	66	13,200	ONE	LP
VE3SST	110	55	12,100	GTA	LP
VE3HED	77	78	12,012	ONE	HP
VY2MP	111	54	11,988	MAR	LP
VE9ACL	102	57	11,628	MAR	UnlimitedLP
VE2QV	105	51	10,710	QC	LP
VE6EX	115	46	10,580	AB	QRP
VE3PYJ	112	44	9,856	GTA	LP
VE3IKT	105	46	9,660	ONE	LP
VA7AQD	99	48	9,504	BC	LP
VE7VAW	104	45	9,360	BC	LP
VE7FCO	96	45	8,640	BC	LP
VE7OGO	103	40	8,240	BC	MOLP
VA4CQD	80	43	6,880	MB	LP
VA3ZLT	59	56	6,608	GTA	LP
VE3FU	74	39	5,772	ONE	HP
VE3KTB/VY0	67	41	5,494	NT	LP
VE4DRK	65	36	4,680	MB	LP
VE9BWK	55	40	4,400	MAR	LP
VE7AX	69	29	4,002	BC	HP
VA3EEB	54	37	3,996	ONS	LP
VE6NR	49	36	3,528	AB	LP
VE3MEW	54	31	3,348	ONE	LP
VE3MT	43	30	2,580	ONE	LP
VE7IAD	44	29	2,552	BC	LP
VE5DLD	41	26	2,132	SK	QRP
VA7XNL	35	29	2,030	BC	LP
VA1MM	38	26	1,976	MAR	QRP
VE3TU	39	25	1,950	ONN	LP
VE3EP	19	16	608	ONE	LP
VE7BGP	14	13	364	BC	LP
VE2MRN	8	8	128	QC	LP

#### WAE RTTY

Call	QSOs	Mult	QTCs	Score	Category
VA2UP	1,638	764	1,965	2,752,692	SINGLE-OP HIGH
VA2AM	1,428	686	831	1,549,674	SINGLE-OP HIGH
VE2FXL	957	502	1,820	1,394,054	SINGLE-OP HIGH
VA7KO	862	533	1,210	1,104,376	SINGLE-OP HIGH
VE3UTT	892	626	766	1,037,908	SINGLE-OP HIGH
VE2AXO	592	395	837	564,455	SINGLE-OP LOW
VE3JI	485	436	649	494,424	SINGLE-OP LOW
VE3CX	647	374	605	468,248	SINGLE-OP HIGH
VE2EBK	537	421	558	460,995	SINGLE-OP HIGH
VA7ST	613	428	376	423,292	SINGLE-OP LOW
VE7IO	726	401	327	422,253	SINGLE-OP HIGH
VE3KI	402	511	313	365,365	SINGLE-OP HIGH
VE4VT (VE4EAR)	589	355	440	365,295	SINGLE-OP LOW
VE2NMB	343	310	490	258,230	SINGLE-OP HIGH
VA3PC	299	341	447	254,386	SINGLE-OP LOW
VE3AJ	264	283	134	112,634	SINGLE-OP LOW
VE7AX	235	263	146	100,203	SINGLE-OP HIGH
VE3XD	253	220	197	99,000	SINGLE-OP LOW
VE3WEJ	301	301	0	90,601	MULTI-OP
VE7SAR	270	168	0	45,360	MULTI-OP
VE2FK	184	188	56	45,120	SINGLE-OP HIGH
VE2CQF	101	86	270	31,906	SINGLE-OP HIGH
VA1CHP	111	70	227	23,660	SINGLE-OP LOW
VE9BWK	82	101	100	18,382	SINGLE-OP LOW
VE5MX	65	104	87	15,808	SINGLE-OP HIGH
VE2QV	69	101	62	13,231	SINGLE-OP LOW
VA3FN	90	128	0	11,520	SINGLE-OP LOW
VE3RCN	82	138	0	11,316	SINGLE-OP LOW
VE7HBS	103	94	10	10,622	SINGLE-OP LOW
VE4YU	59	106	0	6,254	SINGLE-OP LOW
VA3VF	59	95	0	5,605	SINGLE-OP LOW
VE3DZ	49	56	0	2,744	SINGLE-OP LOW
VE6SQ	119	138	38	2,666	SINGLE-OP LOW
VE3SST	27	36	0	972	SINGLE-OP LOW





VE5WD	26	22	SOSSB	LP	SK	1,144
VA7GL	31	19	SOSSB	LP	BC	1,140
VE7GNR	26	18	SOSSB	QRP	BC	936
VA7ZM	25	17	SOSSB	LP	BC	782
VE6KEE	27	15	SOSSB	LP	AB	750
VA7AD	17	11	SOCW	QRP	BC	704
VE3MT	22	15	SOMXD	LP	ONE	660
VA7WWV	14	13	MOLP	LP	BC	364
VE3SST	14	9	SOSSB	LP	GTA	252
VE3CBK	5	4	SOSSB	QRP	ONE	40
VE3EDY	4	4	SOMXD	LP	ONS	32

#### ARRL 160M CONTEST

Call	QSOs	Mult	Class	Section	Score
VE3JM	1,454	115	MOHP	ONE	369,725
VE3EJ	1,479	110	SOHP	ONS	355,300
VA2EW	1,382	108	SOHP	QC	325,728
VE3RZ	1,261	92	SOUNLHP	GTA	236,900
VE2OJ	1,176	96	MOHP	QC	232,608
VE3TA	916	101	SOUNLHP	ONS	200,687
VE3CX	956	86	SOUNLHP	ONN	165,808
VE3PN	882	87	SOHP	ONE	156,687
VE3MGY	993	76	SOLP	ONS	150,024
VE9ML	595	85	MOLP	MAR	108,800
VE3UTT	614	81	SOUNLHP	ONE	102,303
VE6BBP	529	83	SOHP	AB	88,229
VE3KP	493	74	SOHP	ONE	72,668
VA3AR	508	67	SOLP	GTA	67,134
VE3KZ	444	71	SOLP	GTA	63,474
VE3OI	360	81	SOHP	ONS	60,669
VE3OSZ	419	71	SOLP	ONE	59,853
VE3YT	455	63	SOUNLHP	ONS	57,141
VE3ADQ	357	73	SOLP	ONN	52,779
VE3SB	358	59	SOLP	GTA	41,949
VE5UF	270	72	SOHP	SK	39,240
VE3NZ	358	55	MOLP	GTA	38,500
VE3WG	316	60	SOLP	GTA	37,740
VE3VSM	324	57	SOUNLLP	ONS	36,366
VE1RGB	320	54	SOLP	MAR	34,560
VE3FAS	248	67	SOHP	ONS	33,299
VE1ZAC	265	58	SOHP	MAR	31,726
VA2WA	303	49	SOHP	QC	29,645
VE4VT (VE4EAR)	224	67	SOLP	MB	29,547
VE3BXI	250	59	SOLP	ONS	28,084
VE3TW	267	51	SOLP	GTA	27,234
VE7SQ	214	63	SOHP	BC	26,208
VE7JKZ	210	58	SOHP	BC	24,534
VE7VV	201	59	SOQRP	BC	23,128
VE3HG	223	50	SOLP	GTA	22,150
VA3DX	200	54	SOUNLHP	ONS	21,060
VA7ST	182	54	SOLP	BC	19,548
VA3EC	169	51	SOLP	GTA	16,881
VE1OP	139	52	SOUNLHP	MAR	15,548
VE2AWR	184	42	SOLP	QC	15,456
VA2AM	121	54	SOUNLHP	QC	14,148
VE3RCN	157	43	SOLP	ONS	13,330
VA2EU	126	49	SOLP	QC	12,103
VA3WR	115	47	SOQRP	ONS	10,622
VE1RSM	124	39	SOLP	MAR	9,477
VE3WZ	106	44	SOQRP	GTA	9,152
VE2FK	119	34	SOUNLLP	QC	8,092
VE3VN	108	35	SOQRP	ONE	7,490
VA7MM	82	42	SOLP	BC	6,804
VA3RKM	94	36	SOQRP	ONE	6,696
VE3MA	85	31	SOHP	ONS	5,208
VA7KO	77	33	SOLP	BC	5,016
VO1HP	53	30	SOUNLHP	NL	4,800
VE6UM	63	37	SOLP	AB	4,625
VE9AA	75	31	SOHP	MAR	4,588
VE3FU	58	33	SOUNLHP	ONE	4,323
VE3SS	52	36	SOUNLHP	ONS	3,780
VE3XAT	51	35	SOUNLLP	ONE	3,570
VE7CA	52	25	SOUNLLP	BC	2,550
VE6AX	41	23	SOUNLLP	AB	1,909
VE7BGP	36	26	SOLP	BC	1,768
VE6EX	46	12	SOQRP	AB	1,080
VE3FAL	29	18	SOQRP	ONN	1,008
VE3JI	20	15	SOUNLLP	GTA	570

#### LZ DX CONTEST

Call	QSO	Mult	Score	Category
VE2FU	488	82	129,970	SO ALL CW LP
VE2BWL	356	85	121,210	SO ALL CW LP
VE1RGB	314	75	78,600	SO ALL CW LP
VE2FK	213	72	60,840	SO ALL CW HP
VE3OI	243	60	46,620	SO ALL CW HP
VE9ML	285	37	42,069	SO 40M MIXED LP
VE3FJ	143	49	27,146	SO ALL CW HP
VE3EY	112	26	9,308	SO ALL CW HP
VA3ATT	83	30	7,230	SO ALL CW LP
VE3XAT	58	34	6,664	SO ALL CW LP
VY2LI	79	17	5,610	SO 40M MIXED LP
VA7ST	94	26	5,330	SO ALL CW HP
VA1MM	78	16	3,888	SO 40M MIXED LP
VE3VN	54	20	3,300	SO ALL MIXED QRP
VA2ES	36	14	2,492	SO 40M MIXED LP
VE9BWK	23	10	590	SO ALL CW LP
VE2PIJ	7	6	198	SO ALL SSB
VE3EP	11	6	186	SO ALL CW LP

#### TARA RTTY MELEE

Call	QSOs	Mult	Score	Class
VA2UP	1091	110	120,010	RTTY-SOH
VE7CC	929	115	106,835	RTTY-SOH
VE7SZ	616	89	54,824	RTTY-SOH
VE2FK	290	77	22,330	RTTY-SOH
VA3XH	287	76	21,812	RTTY-SOH
VE2FU	370	77	28,490	RTTY-SOL
VA7AM	332	68	22,576	RTTY-SOL
VE2AXO	165	56	9,240	RTTY-SOL
VA7ST	133	51	6,783	RTTY-SOL
VA6JQ	128	49	6,272	RTTY-SOL
VE3AJ	121	51	6,171	RTTY-SOL
VE4VT	101	51	5,151	RTTY-SOL
VE2NMB	103	49	5,047	RTTY-SOL
VE2EBK	70	32	2,240	RTTY-SOL
VE6AX	70	31	2,170	RTTY-SOL
VE3FJ	55	31	1,705	RTTY-SOL
VE3LXL	40	27	1,080	RTTY-SOL
VA3IK	51	17	867	RTTY-SOL
VE9BWK	32	23	736	RTTY-SOL
VA3PAW	33	17	561	RTTY-SOL
VA3FN	7	6	42	RTTY-SOL

#### OK/OM DX CW

Call	QSOs	Mult	Score	Class
VE2FK	188	161	90,804	SO AB HP
VE1RGB	157	139	65,469	SO AB LP
VE3KP	142	124	52,824	SO AB HP
VE2BWL	131	112	44,016	SO AB LP
VE3FH	114	101	34,542	SO AB LP
VA1CHP	113	67	22,713	SO 15M LP
VE1DT	82	75	18,450	SO AB HP
VE3FJ	81	71	17,253	SO AB HP
VE9ML	22	22	1,452	SO 15M LP
VA3NGE	16	16	768	SO AB LP

#### OK DX RTTY

Call	QSOs	DXCC	OK/OL	Score	Category
VA2AM	584	131	48	308,596	SOMB - HP
VY2SS	387	104	23	108,712	SOMB - HP
VE7SZ	602	74	14	90,200	SOMB - HP
VA3XH	352	68	21	81,613	SOMB - HP
VE2HB	294	51	17	39,848	SOMB - HP
VE3EK	145	53	12	16,120	SOMB - HP
VE2EBK	524	134	52	225,990	SOMB - LP
VE2FU	314	96	37	85,785	SOMB - LP
VE3FH	290	81	22	59,740	SOMB - LP
VE6AMI	256	49	10	23,718	SOMB - LP
VA7RY	306	31	2	15,312	SOMB - LP
VE3AJ	130	28	3	8,835	SOMB - LP
VE3RCN	139	21	1	6,754	SOMB - LP
VA7ST	134	24	1	6,250	SOMB - LP
VE3XAT	82	23	2	3,300	SOMB - LP
VE2FFE	59	21	6	2,916	SOMB - LP
VE6AX	70	13	0	1,001	SOMB - LP
VE4YU	36	10	0	780	SOMB - LP
VA7ZM	74	8	0	720	SOMB - LP
VE3LXL	18	12	2	406	SOMB - LP
VA2QR	30	11	0	385	SOMB - LP
VE5KS	18	5	0	270	SOMB - LP
VA7AM	72	2	0	144	SO - 20M
VE9PLS	6	3	0	21	SO - 15M



# CONTEST CALENDAR FOR NOVEMBER, DECEMBER AND EARLY JANUARY 2016

Contest Name	Start	End	Web Address
High Speed CW (Part 1)	0900z Nov 1	1100z Nov 1	<a href="http://hsc.lima-city.de/en/contests.html">http://hsc.lima-city.de/en/contests.html</a>
High Speed CW (Part 2)	1500z Nov 1	1700z Nov1	<a href="http://hsc.lima-city.de/en/contests.html">http://hsc.lima-city.de/en/contests.html</a>
ARCI Top Band Sprint	0000z Nov 3	0600z Nov 3	<a href="http://www.qrparci.org/contests">http://www.qrparci.org/contests</a>
Ukrainian DX Contest	1200z Nov 7	1200z Nov 8	<a href="http://urdx.org/rules.php?english">http://urdx.org/rules.php?english</a>
ARRL Sweepstakes CW	2100z Nov 7	0300z Nov 9	<a href="http://www.arrl.org/sweepstakes">http://www.arrl.org/sweepstakes</a>
Japan Int. DX SSB	0700z Nov 14	1300z Nov 15	<a href="http://jidx.org/jidxrule-e.html">http://jidx.org/jidxrule-e.html</a>
WAE DX RTTY	0000z Nov 14	2359z Nov 15	<a href="http://waedc.de/">http://waedc.de/</a>
OK/OM DX CW	1200z Nov 14	1200z Nov 15	<a href="http://okomdx.crk.cz/">http://okomdx.crk.cz/</a>
Kentucky QSO Party	1400z Nov 14	0200z Nov 15	<a href="http://www.wkdx.com/mainsite/">http://www.wkdx.com/mainsite/</a>
NAQCC Sprint	0130z Nov 19	0300z Nov 19	<a href="http://naqcc.info/">http://naqcc.info/</a>
ARRL Sweepstakes SSB	2100z Nov 21	0300z Nov 23	<a href="http://www.arrl.org/sweepstakes">http://www.arrl.org/sweepstakes</a>
LZ DX Contest	1200z Nov 21	1200z Nov 22	<a href="http://lzdxbf.org/">http://lzdxbf.org/</a>
CQWW DX Contest CW	0000z Nov 28	2359z Nov 29	<a href="http://cqww.com/">http://cqww.com/</a>
ARRL 160m Contest	2200z Dec 4	1600z Dec 6	<a href="http://www.arrl.org/160-meter">http://www.arrl.org/160-meter</a>
TARA RTTY Melee	0000z Dec 5	2359z Dec 5	<a href="http://www.n2ty.org/">http://www.n2ty.org/</a>
NAQCC Sprint	0130z Dec 9	0300z Dec 9	<a href="http://naqcc.info/">http://naqcc.info/</a>
ARRL 10m Contest	0000z Dec 12	2359z Dec 13	<a href="http://www.arrl.org/10-meter">http://www.arrl.org/10-meter</a>
ARCI Holiday Spirits HB Sprint	2000z Dec 13	2359z Dec 13	<a href="http://www.qrparci.org/contests">http://www.qrparci.org/contests</a>
OK DX RTTY	0000z Dec 19	2359z Dec 19	<a href="http://www.crk.cz/ENG/DXCONTE#OKRTTY">http://www.crk.cz/ENG/DXCONTE#OKRTTY</a>
Croatian CW Contest	1400z Dec 19	1400z Dec 20	<a href="http://www.9acw.org/">http://www.9acw.org/</a>
RAC Winter Contest	0000z Dec 19	2359z Dec 19	<a href="http://wp.rac.ca/contesting-results/">http://wp.rac.ca/contesting-results/</a>
Stew Perry Topband Challenge	1500z Dec 26	1500z Dec 27	<a href="http://www.kkn.net/stew/">http://www.kkn.net/stew/</a>
SARTG New Year's RTTY	0800z Jan 1	1100z Jan 1	<a href="http://www.sartg.com/">http://www.sartg.com/</a>
ARCI New Years Sprint	1500z Jan 1	1800z Jan 1	<a href="http://www.qrparci.org/contests">http://www.qrparci.org/contests</a>
ARRL RTTY Roundup	1800z Jan 2	2359z Jan 3	<a href="http://www.arrl.org/rtty-roundup">http://www.arrl.org/rtty-roundup</a>
NA QSO Party CW	1800z Jan 9	0600z Jan 10	<a href="http://www.ncjweb.com/">http://www.ncjweb.com/</a>

## STEW PERRY TOP BAND CHALLENGE PRELIMINARY RESULTS

Call	Category	Power	Grid	QSOs	Grids	Score
VA2EW	SO	HP	FN35	519	191	2354
VE3MGY	MO	LP	EN92	387	129	1720
VE3CFK	SO	LP	EN82	351	136	1568
VE3KI	SO	HP	FN25	335	123	1308
VE3PN	SO	HP	FN25	293	135	1287
VE3OI	SO	HP	EN93	304	140	1075
VE3MM	SO	HP	FN03	323	121	937
VE3ADQ	SO	LP	EN76	161	86	927
VE3YT	SO	HP	EN93	268	100	708
VE3OSZ	MO	LP	FN25	100	69	590
VE7VV	SO	QRP	CN88	55	38	534
VE3CV	SO	LP	EN93	99	62	461
VE7YU	SO	LP	CN88	74	42	390
VE3FAS	SO	HP	EN94	111	72	348
VA7MM	SO	LP	CN89	57	36	330
VE9AA	SO	LP	FN66	65	34	315
VE3DZ	SO	LP	FN03	72	48	310
VE3FU	SO	HP	FN25	65	49	269
VE3UZ	SO	LP	EN92	64	44	263
VE3XAT	SO	LP	FN25	61	40	261
VE7CA	SO	LP	CN89	36	28	193
VA7ST	SO	LP	DO00	42	25	184
VA7DZ	MO	HP	CN88	41	29	124
VE4VT	SO	LP	EN19	13	13	65

## KENTUCKY QSO PARTY

Call	Score
VE3WG	1,774
VE3HED	908
VE3PYJ	668
VA3GKO	640
VE3UKS	630
VE2PIJ	548
VE5BCS	32

## UKRAINIAN DX CONTEST

Call	QSOs	Mult	Score	Class
VE3DZ	379	71	129,007	SO 15M MIXED
VA2WA	187	87	84,042	SO AB HP CW
VE2BWL	95	72	40,968	SO AB LP MIXED
VE9OA	102	54	27,702	SO AB LP CW
VA3GKO	54	45	17,055	SO AB LP SSB
VY2LI	40	37	7,807	SO AB LP MIXED
VE3FJ	33	28	4,004	SO AB LP CW
VE2PIJ	17	19	1,748	SO AB LP SSB
VA2OBW	10	11	561	SO 20M MIXED
VA3RKM	3	2	12	SO QRP MIXED

## WAE SSB CONTEST – Partial Revisions

Call	QSOs	Mult	QTC	Score	Power
VE3JAQ	119	74	10	9,546	SO LP
VE3AJ	32	32	30	1,984	SO LP
VA3FN	32	26	0	832	SO LP
VE4VT	17	23	10	621	SO LP
VE9EX	10	18	0	180	SO LP
VE2PIJ	2	4	0	8	SO LP

## CALIFORNIA QSO PARTY – Partial Revisions

Call	QSOs	Mult	Score	Power
VE6SKY	70	41	5,740	QRP
VE3LJQ	67	34	4,590	LP
VA3EC	56	24	4,032	LP
VE3DQN	11	10	345	LP
VE2PIJ	3	3	18	LP
VE9EX	1	2	6	MS LP

# SECTION NEWS THE RAC FIELD ORGANIZATION FORUM

## BRITISH COLUMBIA/YUKON:

SM Acting Bill Gipps, VE7XS  
A/SM Ron McFadyen, VY1RM  
A/SM Neil King, VA7DX  
STM Al Ross, VE7WJ  
SEC Acting Al Munnik, VA7MP  
SEC Terry Maher, VYIAK (Yukon)  
OBM Bill Foster, VE7WWW  
OO: Dennis Wight, VE7IJJ  
ACC: Karla Wakefield, VA7KJW  
Website: [www.va7mpg.ca](http://www.va7mpg.ca)

## JULY-AUGUST SM REPORT:

Emergency Management BC (EMBC) worked with Radio Amateurs of Canada and their ARES organization to execute a Simulated Emergency Test (SET) on Saturday, October 10, 2015. Details and a summary of the test will be made available in the next issue of TCA.

– Bill Gipps, VE7XS

## Public Service Honour Roll July:

VE7XLH 125; VE7DWG 90;  
VA7MPG 125; VE7GN 140;  
VE7WJ 100

## August:

VA7MPG 235; VE7XLH 109;  
VE7GN 150; VE7WJ 88

## ALBERTA:

SM: Garry Jacobs, VE6CIA  
SEC: Brian Davies, VE6CKC  
STM: Jack Humphries, VE6JRH  
OO: Don Momen, VE6JY

Summer has flown by and some repeater activity on the ARES system VE6YXR has gone on to clean up the Limestone link and improve some of the other drops as well.

I hope we have more ARES activities to report next time. Please send them to me at [ve6cia@rac.ca](mailto:ve6cia@rac.ca) and I will be happy to include them.

– SM Garry, VE6CIA

## MANITOBA:

SM: Jan Schippers, VE4JS  
STM: Jan Schippers, VE4JS  
SEC: Vacant  
DECs: Jeff Dovyak, VE4MBQ (Capital Region and CANWARN); Gord Snarr, VE4GLS (South-East Central Region / South-West Region); Wayne Warren, VE4WR (North Region and Special Projects); Vacant (North-Eastern Region); Vacant (North-West Region).  
ECs: Ron Willisroft, VE4QE (Selkirk and District); Bill Boskwick, VE4BOZ (RM of Grey, RM of Dufferin & Town of Carman); Jason Coombe, VE4JYC, (Brokenhead ARES)

## JULY-AUGUST SM REPORT:

Summer is over and so is our CANWARN severe weather participation. It was an interesting time at the weather office watching their monitors and seeing how

unpredictable some of these storms can be. We lost our Manitoba Agricultural Museum hamfest this year but we still have the International hamfest at the Peace Gardens. I hope everyone has their antenna projects completed for the upcoming winter.

## Winnipeg ARES

Jeff Dovyak, VE4MBQ

Almost 80 Amateurs and several non-Amateurs assisted Winnipeg ARES to provide volunteer Amateur Radio communications for the 2015 Manitoba Marathon on Father's Day, Sunday June 21. We had five new or newer Amateurs also involved.

Volunteers included:

**VA4s:** RWT, CAT, DON, AIN, JCH, MAC, IAM, AJG.

**VE4s:** NQ, GTX, QB, BOY, DAE, VZ, MMW, JDH, MHZ, GLS, SE, XYL, SBS, LYN, JAL, CST, PH, PEH, MMG, RIC, LIT, ANF, DJS, VID, PPG, CEU, HQ, JYC, TSY, CEL, HK, JAH, GWB, HAY, AJO, GIS, UG, UK, STS, MWH, STL, RST, EH, HAZ, GWN, ESX, ACX, YYL, CDM, JNF, NCH, TTH, JHJ, WTF, MAB, JFK, KAZ, QV, SCH, SYM, TRO, SIG, RDO, DWG, JS, DLA, VB, GKS, EA, MBQ.

Additional volunteers included: Betty Pettapiece, Mary Perchaluk, Max Perchaluk, Gail Lamoureux and Rhonda Dovyak.

The biggest change for 2015 was the unavailability of the Winnipeg Senior Citizens Radio Club (WSCRC) due to structural renovations so Hospitality Net Control was located at the Marathon Comm Centre with the other Net Controllers. We will keep this model in years to come.

While we couldn't do the event without our dependable volunteers, we also depend on several Amateur Radio organizations to provide support. Supporting organizations for 2015 included: Winnipeg ARES; the Winnipeg Amateur Radio Club; the Manitoba Repeater Society; the Pathfinders Amateur Radio Club; Brokenhead ARES; and South-Central ARES.

Please see the Winnipeg ARC or Winnipeg ARES websites for the detailed 2015 Manitoba Marathon Report: <http://winnipegarc.org/> or [www.winnipegares.ca](http://www.winnipegares.ca)

At our August General Meeting, Garry Frankel, VE4VD, gave us a terrific overview of Médecins Sans Frontières / Doctors Without Borders (MSF) based on a photo-shoot he did at The Forks several years ago when MSF had set up a mock Displaced Persons

## MESSAGE FROM RAC CHIEF FIELD SERVICES OFFICER

It's great to be associated with Field Services once again. I retired on May 29 and found myself with spare time on my hands. What better way to spend the time than EmComm activity. It's been a large part of my life for many years.

In the last TCA, mention was made of a Field Services Action Plan. I am happy to advise that the RAC Board and Executive met during the summer and a document is nearing completion.

In addition, a Section Manager Advisory Council was struck to review outdated documents, Section standards and key ARES position descriptions. Those documents are now before the Board.



CFSO Doug Mercer, VO1DTM  
Email: [vo1dm@rac.ca](mailto:vo1dm@rac.ca)  
(see page 4 for contact info)

I've had the pleasure of renewing some old friendships since returning and look forward to working with all of you. I'm only a call away if I can help in any way. Keep the news coming.

I hope you all have a Merry Christmas and a safe and Happy New Year.

camp. Thanks to David Latour, VE4DLA and the Winnipeg Amateur Radio Club for loaning us a digital projector with HDMI input for Garry's presentation.

The ad hoc NBEMS group being facilitated by Jim, VE4SIG, has had its second hands-on working session and the next session is being planned.

Dick Maguire, VE4HK, will be coordinating about a dozen Winnipeg ARES members who are providing volunteer Amateur Radio communications on Saturday, September 12 for the Parkinson SuperWalk at the University of Manitoba Fort Garry Campus.

Craig Martin, VE4CDM, stepped down as Fundraising Chair in late spring. Hamish Donaldson, VE4JDH and Nicki Albus, VE4MWW, have stepped up as Co-Chairs for Fundraising.

– Jan Schippers, VE4JS

## Traffic Totals

July: 3

August: 2

## ONTARIO NORTH:

SM: Al Boyd, VE3AJB  
[ve3ajb@vianet.ca](mailto:ve3ajb@vianet.ca)  
STM: Pat Dopson, VE3HZQ  
[dopsonp@vianet.ca](mailto:dopsonp@vianet.ca)  
SEC: Stiig Larsen VE3LBX  
[slarsen@vianet.ca](mailto:slarsen@vianet.ca)  
OBM: Paul Caccamo, VA3PC  
[va3pc@ciinet.org](mailto:va3pc@ciinet.org)  
Website: <http://ontario.racares.ca>

## JULY-AUGUST SM REPORT:

The summer months have been mostly quiet here in Northern Ontario as Amateurs are on holidays and not much activity has taken place.

I want to thank all the Amateurs who supported me while I sat in as acting Section Manager for Ontario South and the GTA until the replacements were found.

Your commitment to the ARES program and RAC does not go unnoticed and is very much appreciated.

– Allan Boyd, VE3AJB

## ONN SEC Report

### Albany District

**DEC Dave Hayes, VE3JX**, reports that it was a fairly quiet summer for ARES activity. Most urban areas of the Albany District are enjoying their D-STAR facilities. Both Sault Ste. Marie and Timmins have their own D-STAR repeaters, and Elliot Lake is able to use the one in Little Current. Stations from these cities are heard on the Canadian nets, as well as others using dongles from areas without repeater coverage.

We're looking forward to seeing experimentation with the inherent data facilities of the D-STAR network. This, of course, requires radio owners to purchase data cables to interface their radios with their PCs or Windows tablets.

At the moment, D-RATS would be the program of choice for this. While the ICOM cable is quite pricey, there are other options available. Bear in mind, the *data cable* is also capable of doing programming of the radio besides data transmission. It has the 2.5 mm mini plug at one end, whereas the straight *programming cable* has a 3.5 mm plug, which permits programming only.



## Echo Bay and Laird Township

In the last Section Report in the September-October 2015 TCA (page 59), EC Dave Campbell's call sign was listed incorrectly. Here is the correct information: **"EC Dave Campbell, VE3EGC,** reports that his group participated in Field Day and Canada Day contests."

## Elliot Lake

**EC Davis Sutherland, VE3SUT,** reports that we had a station set up on the first of August down at the Miners memorial. We made a few contacts on 40 metres to show people what Amateur Radio was all about. We had seven operators there; not all at the same time. Our annual picnic was held on August 18 and there were approximately 26 participants including some visitors.

## Sault Ste. Marie & Area

**EC Brent MacMillan, VE3OT,** reports that the new D-STAR repeater and Gateway seems to be working very well. The repeater, VA3SNR, is temporarily working at the QTH of AEC Dave Pitcher, VE3DPT, who has been the tech involved in its setup.

At first, the range was very poor so Dave moved the antenna up higher on his tower with the resultant coverage dramatically increasing. Its range will increase again when it moves to its new location. The repeater is automatically connected to the proper reflector (XRF21B) for both the Ontario North D-STAR Net on Mondays, and the Canada-wide D-STAR Net on Fridays. Local participation in those nets has been good.

Dave has also been helping local owners with programming their radios to take advantage of the linking facilities of D-STAR, among other things. Many thanks Dave for all your expertise and fine work.

## Killarney District

### Manitoulin Island and North Shore

The Manitoulin ARC once again assisted the team led by Igor Slakva, VE3ZF, in the RAC Canada Day Contest. The team consists of members Igor Mordick, VE3KAO, Pat Dopson, VE3HZQ, Doug Smith, VE3OUI, and utilized the VA3RAC call sign. This year the team operated from the Manitoulin – Gore Bay Municipal Airport aided by several members from the club: Al Boyd, VE3AJB, Jim McLean, VE3LJM, Mike Maciuk, VE3UKI, as well as recently certified Amateurs Martin Connell, VA3MFC, Roger Lloyd, VA3REL, Herne Steelgrave, VA3HWS, and Brett Houle, VA3TBM.



## RAC SECTION MANAGER ELECTION NOTICE: THE MARITIMES AND ONTARIO NORTH SECTIONS

You are hereby solicited for nominating petitions pursuant to an election for Section Manager. The name of the incumbent appears on **page 4** of this issue of *The Canadian Amateur*. A petition, to be valid, must carry the signatures of 10 or more full members of RAC residing in the Section concerned. It is advisable to have more than 10. Photocopied signatures are *not* acceptable. Signatures must be on the petition. Petition forms are available from RAC Headquarters but are not required.

The form below is acceptable:

### Notice to all RAC members in the Maritimes and Ontario North Sections

\_\_\_\_\_ (place & date)

RAC Chief Field Services Officer  
720 Belfast Road, Suite 217  
Ottawa, ON K1G 0Z5

We, the undersigned RAC Full members residing in the \_\_\_\_\_ Section, hereby nominate

\_\_\_\_\_ (name & call sign)

as Section Manager for this Section for the next two-year term of office.

\_\_\_\_\_ (signatures & call signs)

\_\_\_\_\_ (addresses with postal codes)

A Section Manager must be a resident of his or her Section, a licensed Radio Amateur holding an Amateur operator's Certificate (or equivalent as stipulated by the *Radiocommunication Regulations*) and should always operate radio equipment only within the limits and privileges of the certificate and qualification held, and have been a RAC Full Member for a continuous term of two years at the time of nomination.

Petitions will be received at the RAC Headquarters office until 1600E on **December 10, 2015**. If only one valid petition is received, the person nominated will be declared elected. If more than one valid petition is received, a balloted election will take place. Ballots will be mailed from RAC Headquarters on or about **January 1, 2016**. Return of ballots by 1600E **February 20, 2016** and will be counted after **February 27, 2016**.

A Section Manager elected will take office on **March 1, 2016** to complete a two-year term until **February 28, 2018**. If no valid petition is received, the Section will be resolicited in *The Canadian Amateur*.

*Doug Mercer, VO1DTM, RAC Acting Chief Field Services Officer*

In August, the Manitoulin ARES volunteers were very busy assisting the local Lions Club with their annual Haw Eater parade held in Little Current and the annual Providence Bay Fair parade. Many of the recently certified Amateurs were present and got to use their new radios working alongside the regular ARES members, and they performed admirably.

ARES volunteers participating were Al Boyd, VE3AJB, Martin Connell, VA3MFC, James Hastings, VA3AUC, Roger Lloyd, VA3REL, Mike Maciuk, VE3UKI, Marshall Maciuk, VA3NOD, Jim McLean, VE3LJM, Lorraine McLean, VE3LMJ, John Enns, VE3BB, Bob Playter, VE3TKH, Brenda Playter, VA3TKH, Ingrid Schwunk, VA3WIH and Garry Miller, VA3GIM.

The Manitoulin ARC is pleased to announce the installation and launch of a System Fusion repeater, located on McLean's Mountain just outside of Little Current. The new repeater call sign VE3RXR is on a frequency of 442.050 MHz with a positive split and PL tone of 156.7 Hz and has excellent coverage to

the west and north of the Island and along the North Shore.

The Manitoulin ARES group has added two more members to its roster this month.

#### DECs reporting:

VA3s: PC  
VE3s: FAL, JX, LJM

#### ECs reporting:

VA3s: AJV, SPT  
VE3s: EGC, LJM, OTL, MXJ, SUT

### ONTARIO – GREATER TORONTO AREA:

Acting SM: Rick Harrison, VA3NV  
SEC: Rick Harrison, VA3NV

#### JULY-AUGUST SM REPORT:

Summer continued to be a fairly active time for ARES teams in the GTA Section. Field Day kept many groups busy. Many teams were involved with communications for the PanAm Games. Planning is underway for the annual Simulated Emergency Test. Due to scheduling difficulties with served agencies the GTA SET will take place on Saturday, November 7.

A quarterly GTA ARES meeting was held in August at the Red Cross Ontario Zone office in

Mississauga. Representatives from all but one of the Section ARES teams were in attendance. A Niagara ARES EC attended the meeting as a guest.

Attempts are underway to build a closer working relationship between the GTA, Niagara and Hamilton ARES groups.

### Durham Region

The number of ARES members in Durham Region continues to increase. Discussion is taking place with several emergency response agencies in the region. Efforts are also underway to secure a monthly meeting location.

### Halton Region

ARES teams in Halton Region continue to be busy. Burlington ARES, assisted by members of South Halton ARES and Hamilton ARES (and an SWL), provided communications for two public service events during this past reporting period. Burlington ARES personnel check into the regional Halton nets, the South Halton ARES nets and the Hamilton ARES nets on a regular basis.

In Georgetown the ARES repeaters and the packet radio BBS and node continue to be well maintained and are available for use at any time.

The South Halton ARES group, as it has done for the past several years, set up an information table at the Milton Hamfest. Traffic was brisk with many people stopping by to learn more about ARES. Several applications were provided to interested parties. Hopefully, this will result in an increase in ARES members.

Work continues on the group's trailer project with additional internal framing being completed. A wi-fi antenna for MESH use was installed and installation of the radio console is nearing completion. Group members participate in both the South Halton ARES net and the regional Halton net.

### Peel Region

Members of Brampton/Caledon ARES assisted with communications for the PanAm Games.

### Toronto

While ARES meetings in Toronto have been suspended for the summer, group members continue to be busy. Communications assistance was provided for both the PanAm Games and the annual Warrior's Day Parade. Meetings will resume in the fall.

Toronto's impressive number of voice nets continue to operate through the summer. This reporting period there have been 64 per month covering UHF, VHF, 220 MHz, HF and D-STAR.

### York Region

The York ARES EC met with the Region of York's Community Emergency Management Coordinator to discuss York ARES continued participation in the Region's emergency response plans. The meeting was quite satisfactory.

**Total number of registered ARES operators in Section:** 214

**DECs reporting:** VE3BGD

**ECs reporting:** VA3RMU, VA3KRA, VE3OGP, VA3RJS (AEC), VA3BXG, VA3TMB, VE3TMA, VE3OV, VE3VXY and VE3GRL.

### OBS reporting:

**July:** VE3JUZ 7, VA3KRA 1

**August:** VE3JUZ 7, VA3KRA 1

— Rick Harrison, VA3NV

### ONTARIO EAST:

SM: Michael Hickey, VE3IPC  
Email: ve3ipc@gmail.com  
SEC: Michael Hickey, VE3IPC  
STM: Vacant  
OBM: Vacant  
Website: <http://ontario.racares.ca>

### JULY-AUGUST SM REPORT:

Renfrew County West (RCE) ARES Group Coordinator Debra, VE3IEH, has submitted her last report stating that there were no ARES group activity reports for the summer months. Debra and her husband are moving west in the very near future. Debra has not identified a replacement GC (EC) yet and will inform the ARES District EC if someone does step forward. We give Debra our thanks and appreciation for the two years she served as Group Coordinator. She has moved the ARES group to a higher activity level and increased PR efforts with a few municipalities. We wish Debra all the best in her future endeavours.

AEC Norm, VE3VY, has reported that he and his family are moving to Ottawa from Lanark County due to family necessities. A replacement AEC has stepped forward and you can see the details in the LNL-ARES group report below.

Oh yes, we are well into autumn but there is still time to install new antennas and to check all of your existing antennas, coaxes and support systems to be satisfied that all is in order for your serious winter months radio hobby comms enjoyment. You never know, but Santa may need to be "talked in" by radio to reach his many very important Christmas destinations, hi.

### ARES / EmComm Groups

**Submitted by EMRG/Ottawa ARES group AEC Mike, VE3FFK**

The EMRG/Ottawa ARES group's repeater test on July 2, rather than the first Wednesday, went well, with all repeaters OK. Thanks to Tim, VA3PYC, Austin, VA3SWY, Tracy, VA3TXN, Sandy, VE3AAC, Colin, VE3CWQ, Mike, VE3FFK, Roger, VE3NPO, and of course the test conductor Dave, VE3KMW.

As part of the digital system testing, Mike, VE3FFK, posted to one of the group's two ARES/EMRG packet BBS systems and extracted summaries of the weekly RAC Ontario Sections Bulletin that VA3PC makes available.

The repeater test on August 5, headed by Dave, VE3KMW went well as usual. Thanks to Jean VE2OCQ, Tim, VA3PYC and Mike, VE3FFK. The thin turnout is expected for this time of year. Mike, VE3FFK, noted that on VE3OCE UHF (443.800), received signal strength was going up and down. We are not sure of the cause but we will keep an eye on it. Local EMRG packet systems (digipeaters, BBS and Winlink)

### DISTRICT COORDINATOR AND GROUP COORDINATORS NEEDED IN LOYALIST ARES DISTRICT

If you live within the Loyalist District and have a sincere interest in providing Emergency Radio Communications to your local municipality in times of need, then this is for you. The Ontario East Section Manager is looking for anyone interested in either the ARES District Coordinator (DEC) or the ARES Group Coordinator (EC) positions. Several ARES Group Coordinators are needed.

The District Coordinator's job is to assist, provide support and ongoing guidance to new ARES Group Coordinators who would wish to start up their own ARES group where such is most needed in the Loyalist District. The Group Coordinator's job is to start up, manage, direct and provide ARES training and exercises to their new ARES group membership within their county or municipal area where he or she believes there is a need for an ARES EmComm group. Training tools are available from your Section Coordinator.

The Section (EC) Coordinator's job is to provide direction and support to the DEC and to Group Coordinators where there is no DEC.

*Do you know that if several ARES groups came into existence within the Loyalist District, it would then be possible for a group to assist another out in a time of need for a Mutual Aid relief call for help, as an example?*

More is better for greater EmComm success and achievement.

If you would like to learn more about the above ARES leadership positions and have people management skills, are self-motivated and like to succeed, then this may be the community challenge for you. If you are a retiree, this may be a great way for personal fulfillment while supporting your local community. Please contact me directly at [ve3ipc@gmail.com](mailto:ve3ipc@gmail.com).

were all fine and the Ottawa ARC repeater VE2CRA was working the previous week. The Winlink node was down for a day or so but thanks to Peter, VE3BQP, it was brought back promptly when advised of the issue. Extracts from the Ontario Sections Bulletin were once again posted on the VE3OCE-1 packet bulletin board system each week.

On August 8 and 9, the Ottawa ARES group assisted with the MS Bike tour from Metcalfe, in South Ottawa to Cornwall and back. Being a relatively new event for Amateurs, which took place during peak vacation time, recruiting volunteers for the event was difficult. With a few last minute additions, the return of a long inactive Amateur, and a relatively new Amateur on board, all the spots were covered. The event requires inter-operation between Ottawa and Cornwall Amateurs. This year, debrief sessions were held in person for the Cornwall group and on air for Ottawa. The results of these sessions were then combined and sent to all participants. Logging, headphones, backup plans and pre-event information briefings were identified as problems, but maps, net operations and staff camaraderie were noted as good points from the Amateur Radio standpoint.

**Submitted by PR-ARES Group Coordinator Lance, VA3LP**

The Prescott-Russell (PR) ARES group once again provided support to the City of Clarence-Rockland during the Canada Day celebrations. The group provided

security around the fireworks launch site from about noon to around 11:30 pm. This year was quieter than normal as it seems more folks are learning that they cannot come into the fireworks area on Canada Day. Again this year, Harry, VA3ZAK, Norm, VA3NPL, Mike, VE3IPC, GC Lance, VA3LP, Jim, VA3KV and Allen, VA3ONN, came out and provided the necessary security. As always, Chuck Segoin provided an excellent fireworks display for the community. As volunteer members they get the best view of the fireworks – really up close.

**Submitted by LNL-ARES group AEC Norm, VE3VY**

The Lanark North Leeds (LNL) ARES group reports that AEC Norm, VE3VY, has resigned his position owing to family needs that require his family to move to Ottawa from Lanark County.

In Norm's place within the LNL-ARES group Dennis, VA3DOY, has agreed to take his place as AEC in Rideau Lakes West. Dennis lives on the outskirts of Westport Village on Bedford Street. Dennis has been given a copy of the ARES District Mutual Aid Plan (DMAP) documents that all ARES group leadership have within the Eastern Ontario ARES District, complete with invoking and/or responding procedures and contact list. Dennis operates HF Advanced, VHF, RMSE, the VA3DOY-10 digital station, and also VE3REX-7 providing digital connections to the Internet and with Kingston VE3FRG-7 and associated networks.



The LNL-ARES digital repeater VE3REX-7 has been moved from the Lions Club property on the hill near Westport to the Westport Legion 542.

Norm gives his thanks to everyone for the ongoing support he receives from the group.

**Submitted by Peterborough ARES Group Coordinator Jim, VA3CC**

The Peterborough ARES group conducted radio checks in July at the EMS building and in the Mobile Command Vehicle. The portable antenna was set up and tests were conducted with several repeaters by Rick, VE3IQZ and EC Jim, VA3CC. Radio checks were also done at the Clonsila Avenue Fire Hall.

The ARES group, in conjunction with the Peterborough Amateur Radio Club, had a great Field Day with four stations and a GOTA station. The event was held in New Hall Park, which is a city-run park, and there were close to 55 people in attendance – the most in a long time.

Rick, VE3IQZ, continues to do the job as Official Bulletin Station (OBS) for Peterborough ARES and has been reading the bulletins on our weekly Wednesday night net on 146.625 MHz RPT at 7:00 pm. There were good comments from members and non-members regarding the Ontario bulletins.

**Submitted by RCW-ARES group GC (EC) Bob, VE3YX**

The Renfrew County West (RCW) ARES group was invited to put on a display at the Killaloe-Hagarty-Richards Fire Hall at Round Lake on July 18 for their annual open house. The group members set up in the conference room at the back of the hall. They had HF voice and digital, and VHF with voice and packet. They used the comms tower at the back of the hall to put up a 3-element VHF yagi aimed at Pembroke and a full-length multiband HF dipole as an inverted V.

GC Bob, VE3YX, stated that he has rarely heard the HF bands as quiet as they were that day. The group members managed two HF contacts, one on 20m PSK-31 and one on 40m Olivia 8/500. No voice contacts seemed to be possible. While there were good paths with the VHF antenna to multiple repeaters, it was noted that there was not enough interest from the public to demonstrate it. They got some interest from a Red Cross volunteer and from a couple of the firefighters in attendance. There were two issues: the group's participating members were not visible in the back room and there were enough activities going on outside that very few people ventured into the building. The demographics might also be a problem as most visitors were

parents with young children. The children were too young to be interested in Amateur Radio when there were fire trucks to be climbed on; and the parents were too busy chasing the children.

The group will likely be invited back and, if so, they plan to make themselves more visible. If parents can visit the Amateur Radio demo kiosk while keeping an eye on their kids, they might be more inclined to check us out. The group will also have to order up much better HF propagation, hi.

The ARES members involved were: Yvonne, VE3RYA, George, VE3GPD, Rob, VA3AGN, Dom, VE3DGZ, Laura, VA3LBS and GC Bob, VE3YX. The Olivia contact was with Dan VE9DAN in Chance Harbour, New Brunswick. The GC noted not having the info on the PSK contact with a K4.

The RCW-ARES group had five nets held on Wednesday evenings in July and four in August.

**Submitted by SD&G ARES GC (EC) Earle, VE3IMP**

The Stormont, Dundas & Glengarry (SD&G)-ARES group reports that in August, despite the summer holidays, ARES bulletins continued to be read each Monday at 7:00 pm local, on the club's 2m net conducted on VE3SVC (147.180 MHz+ T-110.9). Amateurs were also asked to check in on the VE3MTA (UHF) repeater (443.6500 MHz+ T-110.9). Occasionally, we also call for checkins on a new ARES repeater located in Cornwall VE3VSW (444.800 MHz+T-110.9) and VE3SVR (146.760- MHz T-110.9) in Morrisburg. This process confirms the serviceability of the nearby Seaway Valley Amateur Radio Club (SVARC) repeater systems at least once a week, should they be required by the SD&G ARES group.

The communications highlight of the summer was the joint support of several members to host the communications for the entire route of the bicycle trip from Metcalfe to Cornwall on August 8, and then to see the cyclists return the next day. The MS Society was most appreciative of the group's involvement. Thanks to the 11 Amateur Radio operators who supported this event: Ed, VE3EAH, Suzan, VE3EXN, Doug, VE3HTR, Mike, VE3FFK, Luc, VA3LDC, Art, VE3AIH, Ernie, VE3EJJ, Nicole, VE3GIQ, Theresa VA3TGS, Gord, VE3FRB and GC Earle, VE3IMP.

**Districts reporting:**  
**Eastern Ontario**  
**ECs (GCs) or assistants reporting:**

VE3FFK, VA3LP, VA3CC, VE3VY, VE3YX and VE3IMP.

**DECs reporting:** VA3LP.

**OBS reporting:** VE3YX, VE3KIL, VE3VY and VE3IQZ.

– 73, Michael Hickey, VE3IPC

## NEWFOUNDLAND-LABRADOR:

Acting SM:  
Doug, Mercer, VO1DM

### JULY-AUGUST SM REPORT:

This is the fifth anniversary of Hurricane Igor. On TV tonight a story was aired entitled, "Igor: Five Years Later".

It went on to show the devastation that many Newfoundlanders faced at the hand of this horrific storm.

In total, 277 millimetres of rain fell in a 24-hour period, with winds topping 176 kilometres per hour. Storms like this aren't frequent here, but they do repeat themselves so preparation is key.

In St. John's on October 6, SONRA and AVRAC will join all first responder agencies at the RCMP HQ for a Command Centre Workshop. During a two-hour period interoperability will be tested between active Command Centres in the St. John's region.

On September 19, St. John's Amateurs will provide safety communication for the 2015 MS Bike Tour.

Amateurs in central Newfoundland are pairing with those in St. John's to create an IRLP link between the two regions.

On September 19, the Admiralty House Communications Museum celebrated 100 years with the H.M. Wireless Centennial.

A garden party was attended by many local dignitaries and residents. Special thanks to RAC Atlantic Director Ev Price, VO1DK, SONRA station manager at the site and to NL STC Joe Earles, VO1BK, who dressed in military



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uniform and received an imaginary secret code in the same manner as 100 years ago.

Amateurs in the Conception Bay North area are reconfiguring repeaters to provide better coverage. Barry, VO1NC, reported that their Club station at Hearts Content Cable Station will celebrate an important anniversary in 2016. More to come later.

Please keep your news coming.

– Doug, Mercer, VO1DM

### Traffic Totals

August  
Caribou Net: 457



## RAC FIELD ORGANIZATION REPORTS

### National Traffic System (NTS) Net Reports

Net (Manager)	Sessions	QNI	QTC
<b>July 2015:</b>			
BCEN (VE7XLH)	31	269	37
BCYTN (VE7WJ)	31	383	56
MEPN (VE4JS)	30	452	0
MMWXN (VA4GD)	31	494	1
MRS (VE4HK)	9	252	0
MSMN (VE4AEW)	23	569	0
<b>August 2015:</b>			
BCEN (VE7XLH)	31	259	22
BCYTN (VE7WJ)	31	339	29
MEPN (VE4JS)	29	460	0
MMWXN (VA4GD)	31	441	0
MRS (VE4HK)	9	270	0
MSMN (VE4AEW)	21	578	0





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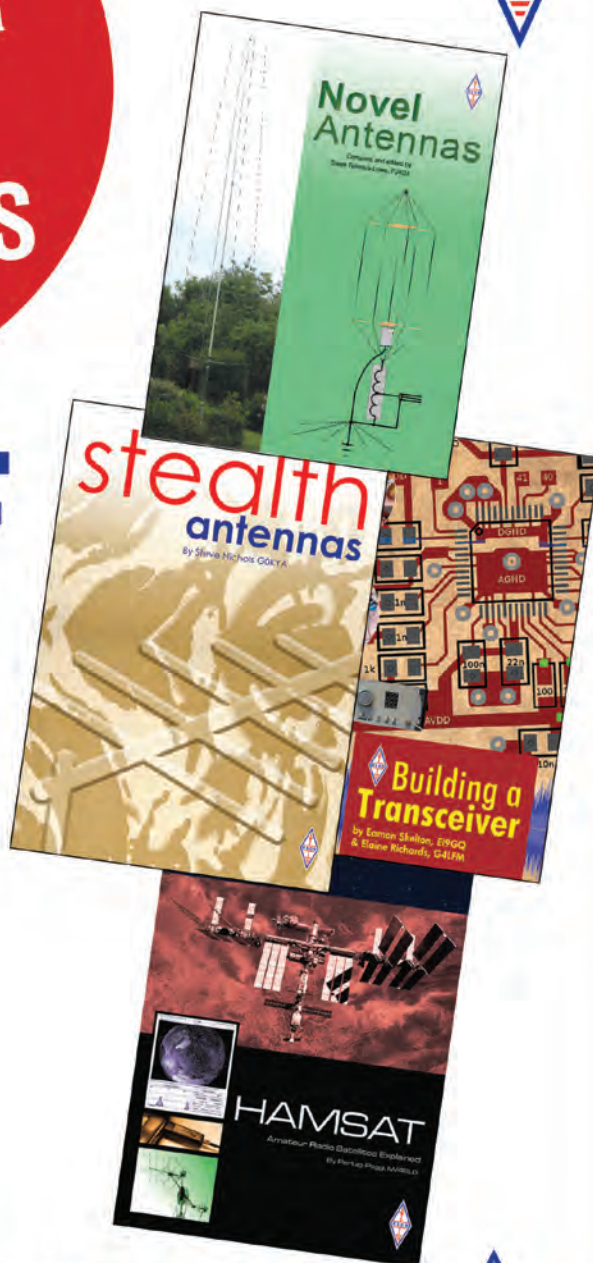
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*Governing Legislation Canada Corporations Act*



RAC aimerait rendre hommage aux radioamateurs qui ont décidé de faire de Radio Amateurs of/du Canada un de leurs légataires légaux par l'expression testamentaire de leur volonté ou autrement, et ce en leur souhaitant la bienvenue dans le Cercle des légateurs Maple Leaf de RAC.

Une des choses les plus importantes que chaque personne a à décider et gérer à un moment donné de sa vie est la juste valeur des biens et immeubles qu'il souhaite léguer à sa famille et à ceux qu'il aime.

Vous pouvez aussi choisir d'exprimer votre gratitude envers des organisations qui signifient beaucoup pour vous.

RAC est bien conscient des multiples facteurs qui démontrent le rôle très important que le radioamateurisme joue dans la vie de beaucoup de personnes à titre de hobby principal et, pour plusieurs, jusqu'à devenir une rampe de lancement pour leur succès financier et leur vie professionnelle.

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